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More Operators Enlist In Seminole Curtailment Effort

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, June 6

IT IS too soon yet to look for tangible results from the Seminole curtailment program.

The potentially dangerous drilling wells mentioned in the report adopted by the meeting of operators with umpire Ray M. Collins in New York May 25, have not yet reached the productive Wilcox sand at which they are to be restricted as to production.

Intangibly, however, there is a better tone to the Mid-Continent industry. True, the Seminole district made a new peak of production—or a series of them—since the New York meeting, but that was to be expected. The voluntary restriction was imposed only upon wildcats and wells that promised to extend the boundaries of the present fields, and the gain in production has come from proven territories, and therefore, had been expected.

The feeling is that a good start has been made and that those who subscribed to the plan put before the New York meeting by Umpire Collins meant what they said there. Other operators not in the meeting, assured that the "big boys" will take the medicine they themselves prescribe, are working along the same lines.

A number of operators who were not represented in the New York meeting have called upon the umpire to help them work out understandings with their offset neighbors and with lessors, all to the end that drilling may be restricted and production held back on new territory that may prove highly productive.

All such agreements are a matter of private contract and touch at no point upon the laws governing combinations.

As stated, none of the wells described in the Collins report adopted at the New York meeting, has come into production except one and it really did not come within the agreement because it belonged to a non-subscribing operator.

This well, however, has been shut down at the top of the sand and will doubtless be produced to only small capacity, if development around it is withheld. Effort is now being concentrated upon perfecting such arrangement.

The crude oil market is described by purchasing companies as "tight." In fact, during all the furore over overproduction in the Mid-Continent, there has been no crude for sale at prices under the market. In fact some new premium paying has made its appearance besides the normal premiums paid on contracts between refiners and independent producers.

These premiums are outside the Seminole district and have not resulted in any considerable amount of oil changing connections, but they indicate that, even with all the much talked of overproduction, there is none to be had except at the market price or better.

The work of Umpire Collins has now entered upon another phase. He finished his report that the operators asked for, designated the wells he considered to be the danger spots in that they might bring in new fields. Now his job is to get the details worked out which make it possible to really restrict drilling and cut down new production.

FIRST of all, he is now working on agreements between operators in a danger spot, acting as their agent in formulating plans. He is also calling upon operators who were not among those who subscribed to the plan in New York, trying to extend the scope of the plan. He has had considerable encouragement, and is hopeful that it will soon cover much more territory than was outlined at New York.

The task is complicated by the multiplicity of royalty ownership under wildcats now drilling or under leases presently to expire unless drilling is done. The royalty owners haven't a thing to say about it so long as the lease to which their royalty is subject is in effect. They

Special Notice

Detailed corrections on refinery market prices in this week's issue are to be found on Page 46.

Collins' Committee

FOUR Oklahoma operators have accepted as members of an advisory committee to assist Umpire Ray M. Collins work out the general plans for curtailment of Seminole production.

E. B. Reeser, president of the Barnsdall Corp.

R. M. Young, president of the Carter Oil Co.

H. N. Cole, vice-president of the Pure Oil Co.

John M. Lovejoy, vice-president of the Amerada Petroleum Corp.

The acceptance of the fifth member of the committee is expected within a few days.

have something to say, however, about renewal of that lease.

The complications which the royalty owners can set up are not generally appreciated. The way they figure in this deal is worth description, for they play considerable part in what is happening in the Seminole district and, if they will show the same willingness to play ball as the operators, the results of the present effort will be realized much sooner.

In every new territory, two classes of purchasers appear as soon as a location for well is made, or sooner. One class is after leases, the other after royalties. The latter goes to the farmer or fee owner and makes an offer for all or part of the one-eighth interest in oil produced customarily retained by the fee-owner. The owner, unless he can already smell the production, usually is willing to take the certain money.

Sometimes the purchaser buys for himself and keeps what he has bought. Frequently, however, he sells fractional interests of what he has bought to others, particularly brokers who buy merely to sell at a higher figure. It is amazing how finely these interests are divided. In a one-sixteenth interest in a 20-acre tract in the Seminole district, 16 New York business men recently bought equal interests. That gave each of them 1/256th. Yet, if the lease is soon to expire and the lessee desires to delay drilling on such a tract, he must hunt up all 16 of these people, besides the farmer who still retains his half royalty, and get their approval of the renewal.

It takes time and money to find them. If merely locating them were all the problem, however, that would not be so troublesome. But, having found the royalty owner, the next job is to get him to ratify the renewal. If he is an oil man, he is easier to handle in a time like the present, for he realizes he is in the same boat as the operator. If he has bought his royalty as an investment, expecting to derive an income from the oil as it is produced, he is for anything that will effect a fair price. If he is a country banker, he usually sees the point. The farmers, themselves, are not difficult to deal with. But the man who has no acquaintance with the state of the oil industry, who has bought as he would buy a speculative stock, praying for the rise, generally wants production. He wants it because it immediately places a higher value on his royalty. He is likely to be hard to manage.

The immediate case before the umpire for action has some of this royalty business mixed up in it. The well mentioned previously as having touched the sand is the Indian Territory Illuminating Oil Co.'s wildcat in the northwest of the northwest of 1-7-6. There are several hundred feet of oil in the hole, which is now stopped on top of the Wilcox sand. The well bears the signs of opening another pool, for it found key formations 300 feet higher than the next closest producer, the Gypsy Oil Co.'s well in 33-8-6, rated as good for 1,500 barrels and now restricted to less than 100 barrels per day.

This area is uppermost in the immediate plans of the umpire and he is working on co-operative methods between the I. T. I. O., neighboring operators, and royalty owners to stop further development there. It is believed the details will be worked out within a few days.

The intricacies of the problem are indicated by that outline of the royalty phases. One suggestion which appears to be a basic one is that the companies pay advance royalties to the owners, applying it on the money that would be paid out of production later. It would be a gamble on the company's part that production would be obtained, but it is being attempted by the operator who suggested it where his company is fairly assured that the drilling will find oil.

So, the umpire's role for the greater part just now is that of getting operators together with each other and with the royalty owners. He will deal with each little area as wildcats go into production, making the arrangements to stop drilling there, then handle the next one as it arises.

The Wildcatter Is The Man To Watch

THE wildcatter today controls the immediate future of the producing industry, the man or company who is searching with the drill for new supplies of crude.

With the present surplus of crude it might be thought that wildcat drilling was greatly slowed down, if not at standstill. Such is not the case, however. There are several hundred such tests drilling in Oklahoma, Texas, other Mid-Continent states and elsewhere over the country, very likely more than a year ago.

One or several of these tests may conceivably unlock the door that will bring new sources of crude supply to the surface in quantity. Under present individual ownership of leases, one well brought in in new territory forces offset drilling by holders of neighboring leases. This, in turn, forces other drilling, and a new pool is in the making and difficult to check at this stage of development.

The wildcat operator may be carrying on his operations for a variety of reasons, the least of which is his desire to see large quantities of new crude thrown on the market, now absorbing a surplus with difficulty. He may be forced to drill by lease requirements. The conditions of his own company may warrant its search for new crude, for immediate uses or for future protection.

Umpire Ray Collins, in charge of the voluntary curtailment measures now in effect in the Seminole district, recognizes by the nature of his restrictive measures that the wildcatter is the man to watch. Drilling in the proven areas is going ahead. Production of new wells there will be compensated for to a good extent by the decline in old wells. The danger of big gains in Seminole territory is from wells which may open new pools there, or extend the present limit of production of known fields.

As long as companies operating there hold to their restrictive agreement, Seminole territory can be held in check. In other districts in other states where wildcatting is going on, control of development is in the hands of companies who apparently desire to hold back the bringing on the market of new pools. Some potential pools in Texas are today held in check through the restraining influence of companies controlling large amounts of acreage.

If other territories, through wildcat operations, present themselves as sources of important new production, it is hardly conceivable that some form of voluntary restrictive measures will not be considered, at least, before such fields assume important proportions. The crude purchasing companies can bring such consideration about, for example, because they must handle the production if it is to come on the market in large volume.

Individual operators will likely listen to such agreements now, where a few years ago they would have turned a deaf ear. Such plans are no longer visionary dreams to the producing industry. Their practicability has been established, and is being established today, not in Seminole alone. The fear that operators taking part in them will be held guilty of violation of restraint-of-trade laws has largely been removed. They have state sanction in a bill now before the Texas legislature. The industry is going to hear a great deal more of them, and not in the far distant future. V. B. G.

Intensive Wildcatting In Texas Is Threat To Stability

By Paul Wagner

N. P. N. STAFF WRITER

HOUSTON, June 4.

WILDCATTING search for new supplies of crude goes on today in Texas, Louisiana, Arkansas and New Mexico, to a greater extent than a year ago.

Texas Panhandle production, which in May averaged approximately 134,500 barrels daily under slowed-down operating conditions, might very easily reach its former high mark of approximately 165,000 barrels through the medium of a few good wells drilled into "rich spots" over the territory.

Two fields previously under control in west Texas threaten to add 40,000 to 50,000 barrels additional daily production in the next 60 days should present restraint break down; and wildcatting over a broad territory fails to slacken.

May 1, 1927, found 64 more wildcat tests drilling in Louisiana, Arkansas, Texas and New Mexico than a month previously. New permits issued in April totalled 76 more than for March in states west of the Mississippi.

There were 466 wildcat tests drilling in the four states mentioned on May 1, last, as against 402 on April 1, last, and 508 on May 1, 1926. New permits totalled 380 in April, as against 296 in March and 554 in April, 1926. The figures on permits include Kansas, Oklahoma, California and Rocky Mountain territory in addition.

The number of wildcats drilling and new permits issued as of May 1, last, by states, is:

WILDCATS DRILLING

Louisiana	54
Arkansas	25
Texas	365
New Mexico	22
Total	466

NEW PERMITS ISSUED

Louisiana	23
Arkansas	5
Texas	184
Kansas	12
Oklahoma	92
California	39
Mountain States	25
Total	380

Natural Treatment

IT WOULD require only the starting of drilling campaigns to increase Texas production 325,000 daily in four Texas fields. (See National Petroleum News, May 11, 1927, Page 75.) Two of the fields, Boggy Creek and the McElroy ranch, may be considered definitely controlled; and the other two the Yates ranch in Pecos county and the Hendricks ranch in Winkler county, are under partial restraint but may not be retarded enough to keep them from exerting market influence.

In the Yates ranch pool, seven wells have made as high as 18,000 barrels daily, pinched down from their maximum possible flow, and pipeline outlets for 30,000 barrels of crude daily will soon be provided.

ILLINOIS PIPELINE CO., sister corporation to Mid-Kansas Oil & Gas Co., is looping its 6-inch line to McCamey with an 8-inch carried, which will provide an outlet from the field for 30,000 barrels daily in about 30 days.

Humble Oil & Refining Co. has contract for 5,000 barrels daily of Mid-Kansas crude, but for a time accepted deliveries at McCamey in larger quantities. It is now taking contract quantities, however, and greater shipments through the Illinois pipeline will require finding a market elsewhere, probably in tank car shipments over the Kansas City, Mexico & Orient railroad from McCamey.

Some shipments of Yates ranch crude will move in tank cars to the Fort Worth refinery of Transcontinental Oil Co., which originally blocked the Yates ranch and which turned it over to the Mid-Kansas for development on a 50-50 basis.

Coming Meetings

Virginia Independent Oil Men's Association, Hotel Murphy, Richmond, Va., June 13, 14.

West Virginia Oil Marketers Association, Kanawha Hotel, Charleston, W. Va., June 15, 16.

Standardization Conference, American Petroleum Institute, Broadmoor Hotel, Colorado Springs, Colo., June 15, 16, 17.

Committee D-2, A. S. T. M., French Lick, Ind., June 20, 21, 22, 23, 24.

Illinois Petroleum Marketers Association, Orlando Hotel, Decatur, Ill., June 22.

Michigan Independent Oil Men's Association, Mackinac Island, Mich., July 14, 15.

Fourth International Petroleum Exposition and Congress, Tulsa, Sept. 24 to Oct. 1.

It has been estimated that the Mid-Kansas & Transcontinental block of 10,000 acres includes fully 60 per cent of the Yates ranch field, as it may be outlined in the future. Whatever the percentage under control of these companies, it is now certain that the California Co., the Gulf Production Co., and the McMan Oil & Gas Co. own important properties that will be found productive later.

McMan Oil & Gas Co. has just taken over for approximately $500,000 the operating half interest in 753 acres in sec. 34 1/2, block 194, which had been previously owned by Marland Oil Co. of Texas.

The last well completed by the Mid-Kansas, its No. 1 Smith-Taylor, in the northeast part of GC&SF sec. 33, block 194, three-quarters of a mile northwest of original production in the field, came in last week making 77 barrels an hour at total depth of 1250 feet and forces an offset by the California Co., Rocky Mountain and Texas subsidiary of the Standard Oil Co. of California, on its adjoining sec. 34, to the north.

A test two and a half miles southwest of the Yates pool discovery has been started by the Mazda Oil Co., in GC&SF sec. 24, block 194, which would break the field open further for competitive developments should it come in.

IN THE Hendricks ranch field, near Kermit, Winkler county, where Southern Crude Oil Purchasing Co. and the Gulf Production Co. have been equalizing production from offsetting wells it has been the policy to continue drilling operations to the top of the pay with the idea of shutting down just above critical levels.

Advices from west Texas indicate that conditions have arisen which made the Gulf decide to drill in all wells as fast as completed. As evidence of this, the Gulf is completing a first 80,000 barrel storage tank on the Hendricks and is going ahead with construction of another. By the time these are filled the Gulf can have a line built to the Texas & Pacific railroad, about 15 miles away.

Southern Crude Oil Purchasing Co., which now has the only outlet facilities under way, is about to complete a line from the field to Wickett, a new oil town on the Texas & Pacific.

Civil Service Feature of Oil Bill Cut; Supervisor Quits

STAFF SPECIAL
HOUSTON, June 3.

POLITICS entered into consideration of Judge H. E. Bell's redraft of the oil and gas conservation bill before the special session of the legislature, last night, with the two-fold result that—

(1)—Qualifications for supervisors were cut out of the measure before it was favorably reported otherwise by the committee; and,

(2)—Judge Bell today tendered his resignation as chief supervisor of the oil and gas division of the railroad commission of Texas, which administers the state's conservation laws.

Provision for pooling agreements which was described by Texas oil industry as constructive step had been cut out of bill by Governor Moody before he permitted its introduction in the special session. Shorn of this feature and the qualifications clause which brought about Bell's resignation the bill now lacks its constructive features. It is believed, however, the bill cannot reach a vote at present session which ends Tuesday.

JUDGE BELL'S resignation, which was followed by that of B. C. Clardy, deputy oil and gas supervisor at San Antonio, came as a climax to differences between Bell, on the one hand, and two members of the railroad commission on the other. Commissioners C. V. Terrell and Lon A. Smith protested at last night's committee hearing against the qualifications provision of the bill, which would, in effect, have brought about a civil service policy in handling appointments.

Proponents of this feature of the Bell measure argued the civil service phase was in line with a policy advocated by Governor Dan M. Moody in the selection of state department employes. Nevertheless, the provision was stricken out before the committee favorably reported the remainder of the bill.

IN TENDERING his resignation, Judge Bell said: "I hereby file with you my resignation as chief supervisor of the oil and gas division of your commission and request that it be made effective at the end of the vacation to which you will find I am entitled.

"I was appointed to this place in Jan., 1924, when Mr. Gilmore, Dr. Splawn and W. A. Nabors were members of the commission. They always granted me reasonable freedom in the selection of the employes of the division of which I am head and I could, under these circumstances, with a degree of satisfaction and enthusiasm work at the difficult task assigned me.

"Since the coming of Commissioners C. V. Terrell and Lon A. Smith to the commission, I have not been given the freedom which I consider necessary for the successful performance of my duties. From the position taken by both of these commissioners before the oil and gas committee of the house of representatives Thursday night, it is clear that our differences along this line are fundamental and irreconcilable. I, therefore, respectfully tender my resignation, as stated above."

BULLETIN

HOUSTON, TEX., June 6.—Judge H. E. Bell's resignation has not been acted on by the railroad commission of Texas, according to Lon A. Smith, one of the commissioners. Smith said he did not know whether Bell might be led to reconsider his resignation but added that in the event of its acceptance, he would favor taking the oil industry's recommendation for a successor.

Panhandle Storage Tank Situation Tightens

Staff Special

HOUSTON, June 2.—Less than 68 days would be required to completely fill all storage facilities in the Texas Panhandle at the present rate of production if outlet facilities are not improved.

The Panhandle territory, which produced roundly 134,500 barrels of crude daily in May, had total available storage room, June 1 of approximately 3,826,000 barrels. A considerable part of this was in the hands of companies which do not buy oil in the territory, so that the stage was fast being approached where some producing interests must build storage or pinch down wells.

Total runs of all pipelines in May averaged 60,000 barrels daily. Tank car shipments averaged about 90 cars, or 18,000 barrels daily. The remaining 56,500 barrels of daily production had to move into storage.

As against May production of approximately 4,182,335 barrels in the Panhandle, pipeline runs accounted for 1,860,000 barrels and tank car shipments 564,000 barrels. The total outgoing crude, amounting to 2,424,000 barrels, balanced against 5,584,775 barrels of steel storage room May 1, left only 3,826,000 barrels of room divided as between all companies, June 1.

Total Panhandle stocks, June 1, last, amounted to about 18,615,000 barrels as compared with 16,896,225 barrels, May 1.

Fort Worth To Have A. I. M. E. Chapter

HOUSTON, Tex., June 6.—Organization of a Fort Worth chapter of the Petroleum Division of the American Institute of Mining & Metallurgical Engineers, has been proposed, and E. O. Bennett of the Marland Oil Co. of Texas is in charge of present steps as temporary chairman.

The national organization has been asked to authorize the local chapter at Fort Worth which would function after the manner of the present Tulsa section. Plans are already being made for an October meeting at which petroleum engineers will discuss air and gas lift methods, use of electricity in oil fields, and the handling of congealing oils, such as produced in the Panhandle territory.

Kanotex Joins I. O. M. A. Group Movement

Staff Special

Chicago, June 4.—Independent Oil Men of America this week announced through L. V. Nicholas, its president and general manager, that Kanotex Refining Co., of Arkansas City, Kan., had just been admitted to membership. This is the second Independent refiner to enter the organization in a week. Vickers Petroleum Co. of Wichita was first.

Mr. Nicholas announces proudly that the Spread Red Eagle, the association's emblem of Independence will now appear on two fleets of tank cars, operated by well known refineries. It was also announced in this week's confidential letter to members that Red Hat motor oils had recently been given the written approval of the General Motors Corp.

Marland District Sales Managers Meet

CHICAGO, June 1.—District sales managers of Marland Refining Co. were in conference here today discussing the current national advertising campaign. Those attending were V. C. Elmquist, Minneapolis; Frank Kendall, Memphis; L. E. Thomason, Kansas City; and J. B. Mudd and Charles Chapin, Chicago. Frank Brimm, Marland advertising manager, with representatives of the Saturday Evening Post talked on how to get best results from the campaign and how to make the most of local tie-ups with the national advertisements.

Burner Advertising To Widen Domestic Fuel Oil Trade

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, June 6. SALE OF oil burners is to be promoted this year as never before. It is estimated that domestic and commercial installations will be increased one third. At the spring convention of the American Oil Burner Association, a subsidiary, the Oil Heating Institute, was organized to supply the public with information about oil heating by means of advertising in general and trade magazines, and by newspaper publicity.

The first advertisement has appeared in this oil heating campaign and others are to follow this month and next, and again in the fall. The oil distributor who contemplates selling furnace oils should begin early to develop the trade possibilities and lay his plans for handling the oils profitably. As the institute's promotion campaign progresses, the oil man should keep apace, or better, anticipate the development of the furnace oil market in his territory. He may even co-operate with the burner dealers in his territory in supplying names of prospects and helping to lay out storage installation so that he may reap his reward next winter by being able to make quick and convenient deliveries.

The institute's president is Lionel L. Jacobs, Fess Oil Burners of Canada, Ltd., Toronto, president of the burner association. Leod D. Becker, secretary of the association, is managing director. Twenty-two burner manufacturers are listed in a recent bulletin of the burner association as members. They are: Aetna Automatic Burner Corp., Providence, R. I.; American Nokol Co., Chicago; Automatic Burner Corp., Chicago; Baker Steam Motor Car & Mfg Co., Pueblo, Colo.; Beckwith Co., Dowagiac, Mich.; Caloroil Burner Corp., New York; Chalmers Oil Burner Co., Minneapolis; Electrol Inc., of Missouri, St. Louis; Federal Burner Corp.; Harding Bros., Chicago; S. T. Johnson Co., Oakland, Calif.; McIlvaine Burner Corp., Chicago; May Oil Burner Corp. Baltimore; National Air-oil Burner Co., Philadelphia; Nu-Way Corp., Rock Island, Ill.; Petroleum Heat & Power Co., New York; Silent Automatic Corp., Detroit; Super Oil Heater, Hartford, Conn.; Sword & Kimber Co., Philadelphia; Timken-Detroit Co., Detroit; Wayne Co., Fort Wayne, Ind.; W. B. Wilde Co., Peoria, Ill.; Williams Oil-O-Matic Heating Corp., and Winslow Boiler & Engineering Co., Chicago.

Full page advertisements appear this month in the Saturday Evening Post, House and Garden, Nation's Business, Time, and Forbes. In July advertisements are to be published in the Saturday Evening Post, Good Housekeeping, National Geographic, Better Homes and Gardens, House Beautiful, Atlantic Monthly, Harpers, Scribners, World's Work, Review of Reviews, and the Golden Book.

Advertisements also are to be carried in architects', builders', heating and ventilating engineering, professional and trade papers. All this advertising is to be supplemented with direct mail, and articles and publicity matter for leading newspapers.

On the mailing list for educational literature are the coal dealers who in the past have issued publicity and advertising that has been unfair and even untruthful in discussions of oil burning. Direct mail matter intended to overcome propaganda will also be sent city fire marshals, city engineers, and building inspectors.

By joining with burner dealers in assisting to overcome any unfair propaganda such as was used by coal dealers in several large cities, two or three years ago, oil distributors may make some profitable business friends who may tip them to prospective customers perhaps weeks before a burner may be installed. Not only could a contract to supply the new burner owner with oil be obtained but the oil man may counsel him to have installed a large storage tank, one of at least 1,000 gallons capacity, and to see that the fill pipe is easily accessible to a tank truck. Sometimes the location of a fill pipe has represented the difference between profit and loss for the oil dealer.

Fuel Oil estimates that domestic and commercial oil burner installations last year totalled 686,000. This number does not include industrial installations but embraces only those installations where fuel is delivered by tank truck and usually is a gas oil or lighter distillate. Of that number approximately 100,000 were installed last year. Estimates based on manufacturing progress for this year and the expected results of the advertising campaign, are for 232,000 more burners in the winter of 1927-28, exclusive of industrial installations.

Fuel Oil estimates that domestic burners consume an average of 1,158 gallons of oil a season, or 27½ barrels. The 1925 domestic burner consumption has been estimated at 18,000,000 barrels; the 1926 consumption at 25,000,000 barrels, and the expected 1927 consumption at 33,000,000 barrels.

This expected increase in furnace oil demand rises only in proportion to the expected increase in number of burner installations. It is a business that warrants scrutiny because the profit and loss hinges on a narrower margin than does gasoline. The domestic burner business is all a delivery business with credit probably more deeply involved than the gasoline business which has a large proportion of cash and carry trade.

Some of the difficulties which the oil man by making the early and friendly acquaintance of the burner dealers in his territory may over-

> "THE oil industry has accepted domestic oil burner equipment as a substantial, legitimate, and permanent market for petroleum products," said Frank A. Howard, president, Standard Development Co., a Standard of New Jersey subsidiary, at the convention of the American Oil Burner Association a few weeks ago. Mr. Howard spoke broadly for the whole oil industry in accepting a relatively new and growing market for the heavy end of petroleum.
>
> The association has organized the Oil Heating Institute whose purpose is to enlighten the public in the use of oil as a fuel and thereby to create a demand for oil burning equipment. The institute has undertaken an extensive advertising campaign in behalf of oil heating and promises greatly to enlarge a market that already is growing rapidly.
>
> The farseeing oil distributor can visualize profitable business in the domestic oil fuel field and is taking hold of it. Like other new and uncharted fields there are pitfalls which must be avoided. Some companies already have pioneered in this field with greatly varying results.

come, have been pointed out by Alex Smidth, Co-Service Oil Co., Newark, N. J., which last year sold more than 3,500,000 gallons of fuel oil "at no profit." Co-Service will sell fuel oil next year, but only at a profit, Mr. Smidth said. He blamed last year's losses on not knowing in advance that small deliveries should command a higher price for the oil than large deliveries. He cited three outstanding troubles in the domestic trade: 1, unsatisfactory installations, which means too small tanks badly placed; 2, skimping of vent pipes, which prevents rapid filling of the storage tank without danger of slopping, and 3, poor location of fill pipes, which makes them inaccessible to tank trucks.

He blamed the small tanks and the badly located installations on the burner dealer who selling on price basis endeavored to cheapen the whole installation. The burner man has tried to make the oil man the goat, Mr. Smidth said concerning a large number of small tank installations in the East. He said he would insist on a 550-gallon minimum and would refuse to deliver oil where the installation was not what he regarded as correct.

He also said oil men should warn their customers against using too heavy oil. He said burner salesmen talked heavy oil with its higher B.t.u. content and lower cost. Many heavy oils are unfitted for domestic burners and said the oil man should refuse to deliver an oil unsuited to a particular burner even though the burner salesman said the burner could handle the heavy grade.

SIMPLIFICATION of grades of oils is necessary if a distributor hopes to make money. He cannot tie up a lot of capital in half a dozen grades of fuel oil and distillates. Burner manufacturers are working toward standardization of oils and four major grades loom as possibilities. These are bunker C for heavy industrial installations, a gas oil around 30-34 gravity, although more depends on flash, pour point and distillation range than gravity; a 36-40 or 38-40 distillate and a kerosene distillate. A bunker C fuel oil customer usually has railroad facilities and buys in tank car lots. Therefore, the domestic fuel dealer need not consider that heavy grade in serving the domestic and commercial building trade.

Mr. Smidth warned against granting a consumer a contract for a longer period than the distributor's contract with the refiner. If the dealer gives the consumer a flat rate contract, he should have a flat rate contract with the refiner. There are various forms of contracts but if the contract is based on "market date of shipment," it would be unwise for the oil distributor to grant a flat rate contract or a contract with a maximum price in it to the consumer, it was pointed out.

Exchange of credit information by oil distributors was necessary, Mr. Smidth said, adding that credit conditions should be strict. He said apartment houses were poor risks at present because many of them were bought at inflated prices and present income did not permit the owners to pay carrying charges and other bills promptly; also ownership of apartment houses sometimes changes rapidly and there often follows a dispute between past and present owners as to who shall pay for the oil. He said individual homes generally were good risks.

PROSPECTIVE furnace oil dealers should look into delivery costs closely before setting prices on their oils. Mr. Smidth said he intended to charge 1 and 1½ cents more a gallon for oil that must be bucketed or is sold in small quantities, than for large deliveries which may be hosed from truck tank to storage tank.

Trucking costs are usually higher for fuel oil than for gasoline, a fact that the prospective dealer must consider in fixing his domestic oil cost. Roads and streets often are partly obstructed by snow or mud in winter and prevent speedy deliveries. More gasoline and motor oil are needed than in summer for the same mileage. Some times and in some places it is necessary to heat the oil before delivery because delivery may have to be made in sub-zero weather.

Charging extra for small quantity deliveries is not new in the retail coal trade. One of the largest retail distributors in the Middle West charged 75 cents extra for making a half ton delivery. Computing domestic fuel oil at 7.4 pounds to the gallon, the figure used by the railroads in computing shipping weights, 75 cents for 1,000 pounds is equivalent to 0.555 cent for a delivery of 135 gallons of oil. Many deliveries for some of the older burner installations are for small quantities and a proportionately higher price should be charged.

When little oil can be delivered at one time, it entails bucketing. The retail coal company charges 75 cents a ton for wheeling coal to a cellar window and dumping it in. That is just half as much extra as is charged for the half ton delivery, or, reduced to its oil equivalent 0.2775 cent a gallon. This makes a total of 0.8375 cent a gallon for bucketing a small quantity if oil companies charged the equivalent charged by coal companies for small deliveries that cannot be handled to storage directly from the vehicle of delivery.

From these figures it would not seem unreasonable for an oil company to charge 1 cent a gallon more for delivery of less than compartment lots which have to be bucketed to consumer's storage tank.

By getting in with the burner dealers at once the domestic fuel distributor may assist in preventing many of these difficulties. Lists of oil burner installations may be obtained from burner dealers, city fire marshals or building departments. Often distributors of heat regulating devices will have listed every oil burner owner in a city or section of a state.

Perhaps some of the dealer's present storage can be used or he may need new tankage. If the place had much weather around zero it may be best to fit the fuel tanks with steam coils. The oil can usually be delivered before it has chilled to the congealing point.

It often is best to equip fuel oil trucks with pumps which are driven by the truck's engine. A distributor need not have every fuel truck so equipped because a great many dumps can be made by gravity, but it would be well to have at least one such outfit with around 50 to 150 feet of hose. A distributor can classify his fuel oil accounts and adapt his delivery equipment and methods to the requirements of the various domestic installations.

Russell Is Losing Out On Severance Tax

Staff Special

TULSA, June 4.—Another door has been slammed in the face of Campbell Russell, Oklahoma's persistent baiter of the oil industry, by the voters. Reports from Oklahoma City are that his workers have made but little progress in obtaining the required 60,000 signatures to initiate a 2 per cent severance tax on oil and gas produced in Oklahoma.

This proposal was to have been submitted to the voters, in the form of an amendment to the constitution.

With less than 30 days' time left to get the names on his petition, the attempt has been virtually abandoned. The only question among oil men is as to the method he will next employ. He has been beaten three times in succession, once at general election, once in the legislature, and now, in his efforts to put a higher tax on oil and gas production.

Texas Gasoline Tax Stays As Is

HOUSTON, June 4—The present extra session of the legislature will leave the Texas gasoline tax alone. The house Friday sustained a point of order that the effectuating bill did not come within the governor's call. An effort had been made to continue the 3 cents a gallon tax after Sept. 1, 1928, when it automatically becomes 2 cents.

Stabilizer Patents Mere Adaptation Of Ancient Art, Is Claimed

By Paul Truesdell

N. P. N. STAFF WRITER

WILMINGTON, Del., June 3. PAYMENT of millions in royalties by the natural gasoline industry to the Carbide & Carbon Chemicals Corp. hangs on the outcome of an infringement suit brought by the chemical corporation against the Phillips Petroleum Co. and a like suit brought against The Texas Co.

Trial of the suit against the Phillips company began June 1 in federal court here before Judge Hugh M. Morris. The suit against The Texas Co. was tried last January before Judge Hutcheson in federal court at Houston, Tex., and is still in the judge's hands.

Judge Morris recently tried the suit of the Gasoline Products Co. against the American Refining Co. of Wichita Falls, Tex., in which validity of one of the Cross patents was upheld, and still more recently heard the case brought by the Universal Oil Products Co. (Dubbs) against the Skelly Oil Co., charging that the Jenkins cracking process as operated by Skelly constituted an infringement of the Trumble patent owned by the Dubbs interests.

Both the Texas Co. and the Phillips Petroleum Co. are charged by the Carbide & Carbon Chemicals Corp. with infringing the so-called "stabilizer" patents owned by the latter, in that they use processes of rectification to produce a stable natural gasoline. If the plaintiff wins these suits, it would seem that the Carbide & Carbon company will dominate completely the best method of making, economically and efficiently, a sharp fractionation of natural gasoline to produce a high recovery product to meet trade requirements.

In the suit against Phillips, infringement is charged of 15 claims in three patents. These patents are: No. 1,465,598, applied for June 1, 1918 and granted Aug. 21, 1923 to Jan Heinrich Christoph de Brey, of Holland; No. 1,429,175, applied for Aug. 29, 1921 and granted Sept. 12, 1922 to Harold E. Thompson and No. 1,523,314, application filed May 31, 1923 and granted to Harold E. Thompson Jan. 13, 1925. The de Brey patent was bought by the Carbide & Carbon and the two Thompson patents were assigned to the company, Mr. Thompson being a Carbide & Carbon employee.

It is understood that de Brey, when he applied for the patent, was an employee of the Royal Dutch-Shell and that the patent was bought by Carbide & Carbon from that company. The 15 claims of which infringement is claimed, are published in full herewith.

To an onlooker it appears that the case hinges on the following three points:

1—Was it invention to introduce into and adapt to the uses of the natural gasoline industry a process of stabilization that was old in other arts, including the refining of petroleum?

2—Is the patent valid that covers the product of the stabilizing system, that is a gasoline free from propane and containing upward of 25 per cent of butane?

3—Was the Carbide & Carbon Chemicals Corp. really the first to introduce rectification into the natural gasoline industry?

Here is the lineup in the battle.

ATTORNEYS for the plaintiff are Frederic P. Warfield and Leonard A. Watson of Mayer, Warfield & Watson, New York, and William G. Mahaffy of Wilmington; for the defendant, George A. Prevost of Washington, Merrell E. Clark of Fish, Richardson & Neave, New York; Robert A. Barry of Washington and James I. Boyce of Wilmington.

Attorney W. P. Z. German of Tulsa is an observer in the trial in behalf of the Skelly Oil Co.

The positions taken by the two companies in the suit were set forth by their attorneys in their opening statements. Attorney Warfield first stated the case for the Carbide & Carbon Chemicals Corp. He asserted that the inventions of the plaintiff represented the so-called stabilizer development which was of the utmost importance to the industry, inasmuch as it made it possible to produce more and better natural gasoline from the same supply of raw material, which is natural gas.

He said the plaintiff would produce figures to show that the use of the stabilizing process has made possible an increase of 10 to 20 per cent in yield of gasoline from natural gas. He stated the production of natural gasoline in 1926 was about 1,300,000,000 gallons and on the basis of increasing the yield only 10 per cent, this would mean 130,000,000 gallons more gasoline.

He briefly recited the history of the natural gasoline industry from the time it consisted of placing drips in gas lines to the present absorption processes and stated that weathering losses, involved in making the gasoline marketable, often ran as high as 50 per cent, which are enormously reduced by the substitution of rectification for weathering.

HE STATED that the stabilizer development has resulted in a new process and a new product. The process, he said, preserves all of the good part of the gasoline that was formerly thrown away and also permits the extraction of still more than could have been extracted by the older methods.

He quoted from NATIONAL PETROLEUM NEWS in an issue following the convention of the Association of Natural Gasoline Manufacturers held in Tulsa, April 23 and 24, 1923 at which James A. Rafferty, vice president and general manager of the Carbide & Carbon Chemicals Corp. announced the stabilizer process to show that great interest was excited throughout the natural gasoline industry by the announcement.

He stated that the stabilizing development created new standards of what gasoline should be and swept away ignorance and misconception which stood in the light of progress. Seeking to establish that the patents in suit represent real invention, Mr. Warfield said:

"Before the date of these patents it was known that natural gas consisted of certain hydrocarbons, methane, ethane, propane, butane, pentane and so forth. These were usually classed as pentane and pentane and higher because it was generally supposed in the art that pentane and higher hydrocarbons were the only ones useful in making gasoline."

Even as high an authority as the Bureau of Standards, Mr. Warfield said, had stated that propane and butane were objectionable.

HE THEN went on to discuss the various claims in the patents. He stated that, while de Brey provided for the removal of the wild and undesirable fractions and the retention of the liquid valuable fractions, he was indefinite in his claims and that Thompson was the first to specify a quality of gasoline containing a definite percentage of butane and having a vapor tension within definite limits.

He stated that the Carbide & Carbon company has built up a considerable business in this field. It

makes some stabilized gasoline itself and has licensed 21 companies who use the process in 31 plants. The company has collected $366,000 in royalties from these licensees. He stated that the license terms are extremely liberal, involving a royalty amounting to 25 per cent of the increased profit resulting to the licensee from the use of the stabilizer.

The opening statement for the Phillips Petroleum Co. was made by Attorney Prevost. He painted the picture before the court as involving the "ancient art of rectification, the youthful industry of natural gasoline manufacture and gasoline." He went on to say that the defense bases its position on principles of the patent law established through 140 or 150 years of practice.

"One of these principles," he said, "is that double use of an old process does not involve invention, that it does not involve invention to lift an old process into a new environment, that it does not involve patentability to take an old process and merely place it in another industry and an analogous art where it performs exactly the same function. That is exactly the situation that we claim exists here. And in addition to that defense, we have the prior art and anticipation.

"THE particular process with which we are dealing is, as I say, that of rectification. It is ordinary, common rectification that is involved. It involves a column with baffle plates and it includes a kettle at the bottom and cooling means at the top and, whenever it is desirable to separate a fluid mixture having components of different boiling points into those components, or wherever it is desirable to split that fluid mixture at any point, rectification has been used, going back 100 years."

Mr. Prevost stated that the testimony would show that rectification was old in the alcohol art, the ammonia art, the distillation of coal, in the petroleum refining art and that it had been suggested to the natural gasoline industry before the date of the patents in suit but that the industry failed to accept it and put it into practice because the industry was "stupid."

Rectification is in fact, fractionation as practiced in refineries. Mr. Prevost stated that in the 60's and 70's rectification was used in refineries to get the gasoline out of the kerosene which was the chief refined product of that day, in order to avoid explosions and fires in lamps. Regarding the place taken by the plaintiff company in selling the natural gasoline manufacturers on the process, Mr. Prevost said:

"It remained for the plaintiff to introduce it forcefully and brilliantly to the industry and in such a way that the industry sat up and took notice. The plaintiff met the gasoline industry as a body and through its spokesman (Mr. Rafferty) who was eminently qualified for the purpose, who was a silver-tongued orator, they presented thought of stabilization as they called it. They did not call it rectification at first.

"THEN it developed that the plaintiff had repatented this old process of rectification in the de Brey and Thompson patents and they said: 'Of course, if you use this, you must settle with me first!'

"It is like a man showing me a short cut through the woods which do not belong to him and then, because I choose to take that short cut, holding me up to pay for something he did not own."

Mr. Prevost cited the Saybolt patent which he stated represented exactly a similar situation to the stabilizer development. The Saybolt patent covered the absorption of gasoline from natural gas into a heavier oil and the hot blending of naphtha with natural gasoline in the coils. It was brand new in the natural gasoline art, Mr. Prevost said, but because it was shown that the same process had been used in the shale refining art and been transplanted into the natural gasoline art, the court of appeals for the eighth circuit and also the lower court, held the patent invalid as being the double use of an old process.

Stating that the Carbide & Chemical interests "approached the natural gasoline industry with a threat in one hand, an inducement in the other," Mr. Prevost said the industry got interested to the extent of installing the process in 31 plants as against 1100 plants that did not install it.

Following the opening statement for the defense, Mr. Warfield called the plaintiff's first witness, who was Harold E. Thompson.

THE witness, tall and spare and youthful looking, after stating that he is 35 years old and an engineer employed by the plaintiff, stated that he had inspected a natural gasoline plant operated by the Phillips Petroleum Co., at Pioneer, Tex., April 28, 29 and 30, 1927. He described the operation of the plant, presumably to establish that it constituted infringement of the plaintiff's patents.

He testified the plant was making three products, the absorption product of least volatility being made at a pressure of 3.6 pounds and about 88 degrees F., the recompressor high condensate, the product of highest volatility, being made at about 123 pounds pressure and 80 degrees F., and the recompressor low product being formed at about 36 pounds pressure and 84 degrees F. He described the rectifying process as follows:

"The three products are conducted to the rectification apparatus. This is a rectifying tower of the packed type, directly flanged to a kettle. The kettle is provided with a closed heating coil for steam. The temperature of the kettle is regulated and held constant by a thermostat which controls the rate of admission of steam. The kettle is a tank five feet in diameter and 18 feet long. The rectifying tower is three by 16 feet.

"The top inlet is three feet six inches from the top of the tower, the middle inlet six feet below that and the bottom inlet three feet below the middle one. The top inlet has a second connection entering at the very top of the tower and terminating in a spray nozzle within the tower.

"THE first three inlets were perforated pipes which projected into the tower and across most of its diameter. The packing used was steel shavings. They filled the tower to a point a little above the top inlet. At the top a four-inch connection was provided to take the wild vapors away.

"The three condensates were intro-

Citations by Phillips

File wrapper in de Brey patent.
File wrapper Thompson's patents.
Rogers 120,539, Oct. 31, 1871.
Barbet U. S. 436,684—Sept. 16, 1890.
Krebs U. S. 583,262—May 25, 1897.
Lummus U. S. 731,799—June 23, 1903.
Linde 795,525—July 25, 1903.
Frasch 845,735—Feb. 26, 1907.
Blau, 862,383—Aug. 6, 1907.
Levy & Helbronner—959,563—May 31, 1910.
Claude, et al 967,105—Aug. 9, 1910.
Saybolt, 989,927—April 18, 1911.
Blau 994,369—June 6, 1911.
Snelling 1,056,845—March 25, 1913.
Blau 1,073,843—Dec. 23, 1913.
Pictet 1,119,312—Dec. 1, 1914.
Sanford et al 1,252,725.
Lacy 1,272,059—July 9, 1918.
Tschudy 1,348,606—Aug. 3, 1920.
Lewis et al 1,392,584—Oct. 4, 1921.
Schill & Woidich 1,415,058—May 9, 1922.
Bertsch 1,452,061—April 17, 1923.
Von Groeling 1,456,953—May 29, 1923.
De Brey, 1,465,599—Aug. 21, 1923.
Barbet-French 1st addition 8,213—Dec. 3, 1907.
Barbet-French 434,677—Dec. 4, 1911.
De Brey, British 123,522—Oct. 30, 1909.
De Brey, Dutch 4,719—Feb. 2, 1920.
Publication, "Apparatus for Distillation and Rectification" by Barbet pp. 193 and 194, 1890.
Publication, "Petroleum World" p. 78, 1911, and same 173, and 174, 1913.
Publication, "Bayerisches Industries Gewerbeblatt" Article by Blau No. 25 pp. 193-201, 1904. Same by Blau No. 26 pp. 201-203.
Publication, "Coal Tar and Ammonia" by Lunge pp. 922-936, 1910.
Publication, "Fractional Distillation," Sidney Young pp. 136-141 and Chap. XII, 1903.
Publication, "Helium—Its Production and Uses," by McLellan pp. 923-947, 1920.
Publication, "Practical Treatise on Petroleum," by B. Crew.
Title Page and pp. 274, 275, 278, 279—1887.
Publication "Mineral Oils and Their Products," by Redwood, title page and pp. 107, 108, 143, 146 (1897) 1914.
Publication "Rectification de Air Liquide," Translation, pp. 50, 55, 89, 109, 110 and Chap. VI and "Separation et Purification des Gas 'l Atmosphere" by Barbet, 1918.
Certified copy of petition, specification, oath and drawing as originally filed May 7, 1917, Serial No. 166,965—Lewis & Cook, 1,392,584.
Same as filed Sept. 28, 1918, Serial No. 256,030, Von Groeling 1,456,953, May 23, 1923.
Same, John G. Bertsch, Serial 418,569—No. 1,452,061, April 17, 1923.
Same Schill & Woidich, Serial 160,642—No. 1,415,058.

Patent Claims on Which Carbide-Phillips Suit Is Based

Jan Heinrich Christoph de Brey—No. 1,465,598
Claims 1, 3, 5, 9 and 10

1—The process of treating mixtures of hydrocarbons containing a valuable liquid and a worthless gaseous component which comprises rectifying the mixture at a low temperature and at a superatmospheric pressure less than 20 atmospheres, and correlating the pressure and the temperature range of rectification in such manner that the maximum temperature is sufficient to expel all the worthless component from the valuable component—while the minimum temperature is sufficient to condense a portion of the worthless whereby the last fractions of valuable component are washed out of the gaseous worthless component by the liquefied worthless portion thus condensed.

3—A process as claimed in claim 1 in which casinghead gasoline is treated.

5—Process of splitting mixtures of hydrocarbons of different volatility into two components, namely, into a valuable liquid component practically free from gases, the recovery of which in a liquid state is not wanted, and into a gaseous component practically free from those fractions of minor volatility which are to be recovered in liquid state, which process consists of subjecting the mixtures of hydrocarbons to rectification at such pressure and within such corresponding limits of temperature that the most volatile components during the whole process of rectification are kept partly in gaseous and partly in liquid state.

9—Process as claimed in Claim 1 in which the low temperatures necessary for rectification are produced by the expansion of the compressed hydrocarbon mixture.

10—Process as claimed in claim 1 in which the low temperatures necessary for rectification are produced by the combined action of the expansion of the compressed hydrocarbon mixture and a cooling agent.

Harold E. Thompson—No. 1,429,175
Claims 1, 2, 3, 7, 8 and 9

1—Process of forming a liquid of predetermined vapor pressure from a mixture of natural gas hydrocarbons, which comprises separating from the mixture a fraction enriched in the heavier hydrocarbons, comprising the fraction in a first compression step to liquefy a portion thereof, compressing the unliquefied vapor to a higher pressure in a second compression step to liquefy a further portion, simultaneously rectifying the two liquefied portions in a single rectifying column, whereby a liquid and a vapor are produced, withdrawing vapor at the top of the column and adding the withdrawn vapor to the vapors passing to the first compression step.

2—Process of forming a liquid of predetermined vapor pressure from a mixture of natural gas hydrocarbons which comprises separating from the mixture a fraction having a higher vapor pressure than that desired in the final product, introducing said fraction into a rectifying column at a point intermediate its top and bottom, separating the fraction by rectification into a liquid portion and a vaporous portion, withdrawing said vaporous portion at the top of the column, compressing at least a part of the portion thus withdrawn and expanding the same into a rectifying column.

3—Process of forming a liquid of predetermined vapor pressure from a mixture of natural gas hydrocarbons which comprises separating from the mixture a fraction having a higher vapor pressure than that desired in the final product, and rectifying the said fraction to produce therefrom a vaporous portion and a liquid portion, the rectification being so conducted that not more than one hydrocarbon of said fraction will occur in substantial quantity in both the vaporous and liquid portions.

7—As a new material, a liquid having the characteristic composition and boiling curve of a natural gas gasoline, containing more butane than petroleum gasolines and being free from propane.

8—A natural gas gasoline having a density of not less than 87° Be and a vapor tension not substantially greater than 12 pounds at 100° F.

9—As a new composition, a liquid such as can be prepared by the herein described process comprising removing from wild natural gas gasoline a vaporous fraction by means of rectification treatment so conducted that not more than one hydrocarbon occurs in substantial quantity in both the fraction removed and the residue.

Harold E. Thompson—No. 1,523,314
Claims 1, 2, 3 and 4

1—As a new product, propane—free natural gas gasoline containing upward of 25 per cent butane.

2—As a new product, natural gas gasoline containing upward of 25 per cent of butane and having a vapor pressure not substantially in excess of 18 pounds per square inch at 100° F.

3—As a new product, natural gas gasoline containing upward of 25 per cent butane and free from more volatil hydrocarbons.

4—As a new product, natural gas gasoline containing upward of 25 per cent butane and free from more volatil hydrocarbons and having a vapor pressure not substantially in excess of 18 lbs. per sq. in. at 100° F.

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duced in the order of their volatility, the most volatile at the top, the least volatile at the bottom. Steam is applied to the kettle and the vapors evolved pass into the rectifier and meet down-flowing liquid. Part of the vapors are thus condensed and part of the liquid vaporized. Temperature at the top of the tower was plus 10 degrees F., kettle temperature was 77½ degrees F., pressure eight pounds.

"THIS operation divides the three condensates into two portions of finished gasoline which collect in the kettle, and the wild vapors which leave the tower.

"The finished gasoline passes out of the kettle through a heat exchanger where it comes into heat exchange relation with the wild vapors from the top of the tower which pass through the exchanger in a reverse direction. The gasoline is cooled to 70 degrees F. and goes to the stock tank, the wild vapors enter the heat exchanger at 40 degrees F. and leave at 76 degrees F. Pressure on the rectifying system is maintained by a regulator and all the wild vapors go to the recompressor scrubber to be recirculated through the system."

The next witness was Dr. George O. Curme Jr., chief chemist of the Carbide & Carbon Chemicals Corp. He testified to tests he had made on samples taken from the Phillips plant, presumably with the object of establishing that the product infringed the product claims of the Thompson patent.

With the testimony of Dr. Rafferty, called after Mr. Curme left the stand, the plaintiff closed its case in chief. Mr. Rafferty was questioned as to license contracts made by the plaintiff and testified to conversations he had with F. E. Rice of the Phillips Petroleum Co. relative to installing the Carbide & Carbon stabilizer process at the Phillips plants. Instead of installing the process, however, Phillips put in equipment of its own design. Following the testimony of Mr. Rafferty, the defense called Dr. Warren K. Lewis as its first witness. Mr. Clark questioned Dr. Lewis.

Always an interesting figure because of his outstanding position as a practical chemical engineer as well as a teacher, Dr. Lewis stated that he was graduated from Massachusetts Institute of Technology in 1905, took a post graduate course in Breslau, Germany, has been a professor of chemical engineering at the Massachusetts Institute of Technology since 1910 and is now the head of the departments of chemical engineering, research chemistry and practcal chemistry at that institution.

He stated that he had done consulting work for the Goodyear Tire & Rubber Co. to evolve a proper rubber solvent for their needs, and that since 1920 he has been constantly retained as consulting chemical engineer by the Standard Oil Co. of New Jersey and the Humble Oil & Refining Co. He said he had also done consulting work for the Vacuum Oil Co.

He described the art of rectification simply and directly from the days of the old alchemists hundreds of years ago who, he said, understood the principles of rectification although their practice was crude, down to the highly refined process used by Linde in separating oxygen from liquid air at temperatures around 190° C. below zero.

HE DEFINED rectification as interaction between a vapor and a liquid in a tower by which the lightest fractions are carried overhead, the temperature at the top of the tower being maintained at such a point as to condense part of the vapors and knock them back to scrub the rising gases. He said this principle is used in various ways, sometimes the overhead product being the desired one and the residue product being the waste one, and sometimes the reverse.

The doctor stated that he was familiar with the use of rectification in refineries and said that in various phases of the petroleum industry, rectification is used in treating various "octaves" of hydrocarbons. That is, in the natural gasoline industry, methane, ethane, propane, butane and so on are treated, while in rectification in the refinery, hydrocarbons of higher boiling point are dealt with.

Attorney Clark's questions brought out from Dr. Lewis expert opinion as to the meaning of various patents covering various phases of rectification. He stated that as early as 1890 Barbet in France was manufacturing rectification equipment and had gone so far as to standardize towers for the purpose.

He told about the use of rectification process to separate helium from

natural gas at Fort Worth during war time when he was one of the consultants called in to help in solving the problems of helium extraction.

ATTORNEY BARRY for the defense read the synopsis of a deposition from R. C. Halloran of the Standard of California, stating that that company, as long ago as 1915, was making pure petroleum ether and pure benzol from natural gas in equipment designed and patented by Walter E. Lummus of Boston. This, it was pointed out, was another application of rectification.

A deposition from E. J. Schaefer, assistant manager of the Whiting refinery of the Standard of Indiana also was read. This stated that that company in 1927 was using bubble towers patented by Lewis & Cook, to rectify cracked vapors. By keeping the temperature at the top of the bubble tower at 392 degrees F. a gasoline of 396 degrees F. endpoint was produced, which was free from heavy ends. This was cited as another instance of the early use of rectification.

Dr. Lewis testified that he had visited the natural gasoline plant of the Phillips Petroleum Co., at Homer, La., which was built directly upon the Blau patent and which was producing about 2000 gallons a day of stabilized gasoline.

Asked about the Schill & Woidich patent, Dr. Lewis stated that a plant built on this patent, which was clear enough to be understood and built upon by anyone skilled in the art, would stabilize natural gasoline and produce as a kettle product, specification gasoline. Dr. Lewis described the difference in loss between weathering natural gasoline to get rid of the heavy ends and subjecting it to rectification.

He stated that although the losses by weathering were considerably greater than where rectification was used, they were not so much greater as they appeared to be because much of the light ends lost were worthless anyway and had to be removed by either process before the gasoline would be marketable.

Under cross-examination by Attorney Watson, the witness stated that, by carefully controlling the pressures and temperatures throughout the system in a compression plant, almost as good a stabilized gasoline could be made as could be produced in a rectifying column.

Besides Dr. Lewis, the defense has as experts, three veterans of the natural gasoline industry, Col. George A. Burrell, G. G. Oberfell and Mr. Burke. The latter, when in the employ of the Oklahoma Natural Gas Co., marshalled the defense in the suit brought against that company by the Standard Oil Co. of New Jersey which resulted in the knocking out of the Saybolt patent.

Work On 1927 Exposition Starts, J. Burr Gibbons, Manager

TULSA, June 4

OFFICES of the International Petroleum Exposition were opened during the past week and the business of getting ready for the 1927 show was begun in systematic manner. While considerable work has been accomplished already by the directors and by the assistant general manager, the major campaign got under way the first of this month.

Directors about two weeks ago made their choice of manager of this year's exposition and this past week he accepted. He is J. Burr Gibbons, prominent manufacturer and a leader in civic activities. Mr. Gibbons has been a resident of Tulsa for over 20 years. He is president of the Hofstra Manufacturing Co., nationally known maker of insecticides.

Mr. Gibbons was one of the original proponents of the exposition idea. In 1923 Earl Sneed, attorney and oil man, wrote to H. O. McClure, then president of the Tulsa chamber of commerce, suggesting that an Exposition be held. Mr. Gibbons was then chairman of the chamber's convention committee. These three and William Holden, secretary of the chamber then and now, spent several weeks in conferring with oil and supply men. As a result, the Exposition came into being. Three were held in consecutive years. There was none in 1926.

MR. GIBBONS was president of the chamber of commerce in 1924. He is a director and member of several committees now and has had a prominent part in every civic campaign conducted in the past 10 years.

Offices for the Exposition have been opened at 110 E. Third st., Tulsa, and the sale of space has been formally started. The response thus far has been encouraging, Mr. Gibbons says. More than 60 manufacturers and dealers in equipment and others allied with the oil industry have given assurance that they will exhibit.

The dates for the Exposition are Sept. 24 to Oct. 1, inclusive. The location is new. The show will be held on the grounds of the Tulsa State Fair, in the southeast part of Tulsa, at the same time the fair is held. Early in the year the directors of the Exposition were released by the Prairie Pipe Line Co. from the contract to purchase the grounds and buildings where the 1924 and 1925 Expositions were held.

All the buildings erected on those grounds by the Exposition are being moved to the new location. This work is nearly completed. Additional permanent buildings will be put up. The fair grounds site is served by good railway and street car transportation, bus lines, and there is ample parking space.

The present board of directors will be increased by the addition of 10 oil and supply men within a week or two. W. G. Skelly is president of the Exposition; Frank J. Hinderliter is first vice-president; Alf. G. Heggem, president of the chamber of commerce, is second vice-president; J. J. McGraw, president of the Exchange National Bank is treasurer; William Holden, secretary; P. D. Hayes, assistant treasurer. The above, with the exception of Mr. Hayes, are also directors and in addition the following are directors: A. F. Bourne, Oklahoma Iron Works; W. M. Bovaird, Bovaird Supply Co.; A. W. Leonard, Devonian Oil Co.; O. C. Staples, Frick-Reid Supply Co.; D. D. Wertzberger, Wertzberger Derrick Co. and Fred W. Insull, Public Service Co.

E. J. Quigley, who has been assistant manager of the Exposition since it was started, will function in that capacity again.

Flooded Plants Back On Production

Staff Special

TULSA, June 6.—Natural gasoline and carbon black plants in the Monroe field in Louisiana are back on a normal production basis again after the floods. The high waters did little damage to this field because backwaters from the Mississippi were not as serious as in many other parts of the state.

At Monroe, the Ouachita river was so full that the Mississippi backwaters did not cause trouble. A few of the natural gasoline plants were down temporarily and a few of the carbon black plants were inundated. Some loss was sustained through destruction of black in storage by the water.

Phillips Line To Draw On Panhandle Gas

Staff Special

HOUSTON, June 2.—Reports from Amarillo say that Phillips Petroleum Co., of Bartlesville, Okla., which recently acquired control of the Oklahoma Natural Gas Co., for $28,000,000, will lay a 20-inch gas pipeline from the Texas Panhandle territory to a connection with the existing system at El Reno, Okla.

Three Companies Pool Interests To Operate Oklahoma Lease

By A. F. Hinton

N. P. N. STAFF WRITER

TULSA, June 4.

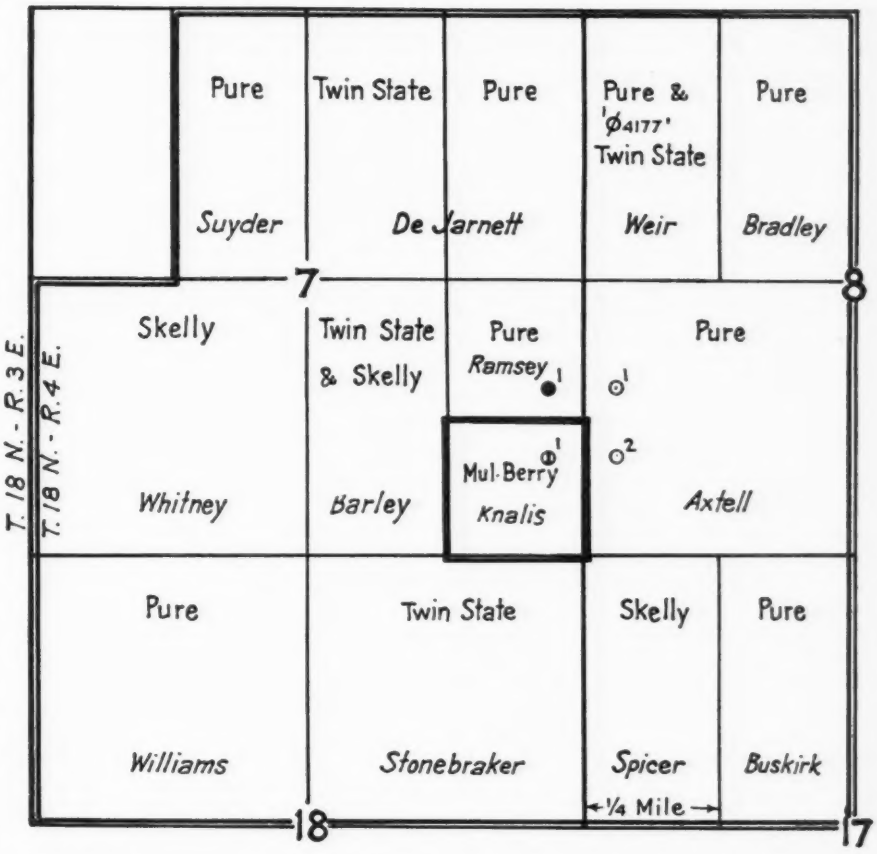
THERE WAS recently brought in in Payne county what is believed to be the first well drilled in Oklahoma on property operated through two or more companies pooling their interests with an end to wider application of conservation principles.

The well, on a block of 1320 acres to be developed under co-operative management, showed good for 3500 barrels daily in the Wilcox sand. Having decided to conserve the gas pressure, by agreement, it was pinched back to 1200 barrels against 900 pounds gas pressure.

The land in question is just east of the town of Mehan, and about two miles northeast of the pool of that name. The latter is sometimes called the Deep Rock field, Deep Rock Oil & Refining Co., (shaffer) having been the principal operator there.

The companies interested in the development are Pure Oil Co., Twin State Oil Co., and Skelly Oil Co.

These three companies own a great deal of acreage in this general vicinity, mostly "checkerboarded" and scattered around in tracts of 40 to 160 acres. One lease, an 80-acre piece comprising the W½ NW of 8-18-4, was owned jointly on a 50-50 basis by Pure Oil Co. and Twin State Oil Co. These two drilled a well on SWc NW NW of the section. It was a dry hole, having been abandoned at 4177 feet, but showing of oil was sufficient to encourage further drilling.



Block of 1,320 acres in Payne county, Okla., owned and operated jointly by Pure Oil Co., Skelly Oil Co., and Twin State Oil Co., showing Wilcox sand well recently completed. Lease ownerships by companies are shown as they were before co-operative ownership plan went into effect

FROM this beginning, the idea of pooling leases in the vicinity was born. The three companies principally interested got together to discuss their various holdings and to work out some plan by which the area could be thoroughly prospected. This conference developed into a decision to throw in together, each company having an undivided interest in the whole block and with the company having the largest interest doing the actual development work.

As shown on the accompanying map, a block of 1,320 acres was laid out and chosen as the acreage to be taken over under the co-operative development plan. This block consists of 33 forty-acre tracts. The Pure Oil Co. having 18 of these 40's inside the block, its interest in the block was fixed at 18/33. Similarly, Twin State, with eight 40's, acquired title to an 8/33 interest in the block and Skelly to a 7/33 interest. On several 80-acre leases, two companies held ownership on a 50-50 basis. In counting interest in the final line-up, a 40 would be assigned to each of the two companies.

The leases were transferred from one ownership to another by each company assigning interests to the other two participants. For instance, Pure Oil Co. assigned a 7/33 interest in all its leases to Skelly and an 8/33 interest to Twin State, receiving from them in turn an 18/33 interest in each of their leases. As the block now stands, it is covered by one oil and gas lease, with the three companies having the undivided interests already set out.

The only "fly in the ointment" is a 40-acre lease in the center of the block, owned by none of the three participating companies, and not included in the co-operative ownership arrangement. This lease, which offsets the recently completed well on the south, is held by the Mul-Berry Oil Co., headed by J. E. Mullendore, a well-known oil man and banker of Cleveland, Okla. It is not known whether or not efforts were made to get the Mul-Berry into the deal. It is likely that it refused to join because its interest in the block would have been so small.

THE three companies agreed that the Pure Oil Co. would operate the property. Before actual drilling was started, the district was core-drilled, each company paying its proportionate share of the expense of this work. Location for the first well was selected with reference to structure revealed by the core-drilling operations, and agreed to by all three companies. The participating companies will have joint management of the property, and the vote of two of them will prevail if any question arises

as to location of wells, number to be drilled, or anything else affecting development.

Each company will pay its proportionate share of expense of developing the lease, will pay its proportionate share of royalty, and will receive its proportionate share of revenues derived from operation. Each company has the right to take its share of the oil at any time and to dispose of it as it sees fit. For instance, the Sun Oil Co. having a refinery at Yale, about 18 miles northeast of the well, the Twin State may deliver its share of the oil there if it so desires.

In the event that a gasoline plant is built on the property, the companies will share jointly in its expense and will take their regular share of its revenues. Gasoline may be disposed of as each participant sees fit.

The first well to be completed on this block of leases is the No. 1 Ramsey, in the SEc NE SE of 7-18-4. This well got the Wilcox sand at 4112 feet and when drilled six feet in showed good for 3,500 barrels daily. The three companies having decided upon a policy of conserving gas pressure, the well was pinched in by means of a choke nipple and is flowing through a ¾-inch opening at present. It is making 1,200 barrels against a 900-pound back pressure. The companies will try to keep the wells on this property flowing as long as possible and have an opportunity to make some very interesting experiments with back-pressuring. The Mul-Berry Oil Co., although not in on the co-operative feature of the proposition, has agreed to co-operate in the gas-conservation plan, and will also maintain back-pressure on its wells.

The direct south offset to the new well is being drilled by the Mul-Berry, as shown on the map. This necessitates the drilling of two wells on the Axtell farm to the east, one to offset the producing well and the other offsetting the Mul-Berry. It will be noted that there are 13 fee-owners in the block. Offset obligations must of course be taken care of as on any other group of properties. However, speed of development can be regulated to a considerable extent and the haste and waste incident to competitive line drilling will be eliminated. Drilling can proceed in an orderly manner, and with due regard to structure and other conditions. And above all, gas pressure in the structure can be maintained and conserved, to the end that flowing life of the wells may be extended greatly and ultimate yield of the property be increased.

Ship Natural Gasoline Through Line Designed for Crude Oil

TULSA, June 4.

UTILIZATION of crude oil line to move natural gasoline has been successfully accomplished on two recent occasions, by the Continental Oil Co. in its northwest New Mexico operations. The striking point is that only a small quantity of gasoline was discolored each time, although the distance the gasoline was moved was about 90 miles.

In the Rattlesnake dome pool of northwest New Mexico, the Continental, operating on lands under lease to the Santa Fe Petroleum Co., has developed substantial production of very high gravity crude. As shipped, the crude is around 64° gravity but as it comes from the well it is much lighter than that.

Samples have been caught that run as high as 76°. Naturally, this crude contains much "wild" stuff and as produced will not be accepted by the railroads for shipment.

The company installed a stabilization plant in the field and the crude is brought down to condition for railway shipment. In knocking out the light ends, considerable merchantable gasoline is saved. At the time the oil pipe line from the field to Gallup, a 4-inch line, was utilized for the first time to handle gasoline, about 10,000 barrels of 84° product was shipped. Without making any changes in the system of operating the pump station, gasoline was started through the line. In fact, according to Thomas Kinney, manager of pipe lines for the company, the station engineer was unable to detect any difference in the manner his engines and pumps performed and did not know but that he was handling crude oil until he was told.

At the Gallup end of the line, frequent samples were taken and by the time 300 barrels had been delivered there, the stream was coming through clean. Of the merchantable gasoline 9,500 barrels were then run through the line.

This was the first shipment. Since that time another, not so large, was made and the result was practically the same, 300 barrels being delivered off color.

Because of the high gravity of the oil for which the line is primarily used and its non-viscous character, the switching from oil to gasoline is much easier than would be the case in most fields, as little of the crude oil adheres to the pipe walls.

Gas Committee Will Retain Counsel

CLEVELAND, O., June 4.—Special counsel will be retained by the gas conservation committee of the American Petroleum Institute, in accordance with the resolution adopted by the executive committee on May 26. Pending a study of existing state laws to conserve gas and a recommendation by this special counsel through the conservation committee to the board of directors, no action will be taken on the question of whether the Institute should favor enactment of state laws.

Standard Gets More Water Frontage

LOS ANGELES, June 5.—Standard Oil Co. of California has leased three acres on the main channel at Los Angeles Harbor adjoining its berths Nos. 97 and 98, upon which office buildings and other facilities needed by its growing shipping needs will be erected.

April Crude Recovery Less Than March's

Cleveland, June 6.—Although Seminole production reached new heights in April, daily average production for American fields averaged 23,000 barrels daily less than March production. The April daily average was 2,406,000 barrels. The 1 per cent decline was due to shutdowns in the older fields when crude oil prices were reduced. These figures were compiled by the Bureau of Mines from pipe line run reports.

Seminole net production, according to the bureau's report, averaged 307,000 barrels daily in April, compared with 282,000 in March. Panhandle (Texas) production fell 3,000 barrels daily average to 122,000 barrels average for April. Seal Beach (California) rose 11,000 barrels daily average to 37,000 barrels average.

Stocks of crude oil April 30 totaled 415,524,000 barrels, a gain of almost 8,000,000 barrels during the month. Stocks of all refined products totaled 136,100,000 barrels, a decline of 122,000 barrels in April.

Gasoline production averaged 886,000 barrels daily, a decline of 14,000 barrels daily average from March output. Gasoline imports were less, exports more, and domestic demand 54,000 barrels daily average more. Stocks April 30 were only 38,000 barrels less than March 31 stocks.

Increased exports more than offset a slump in domestic kerosene demand. Output was a trifle less than March output and stocks were lowered 28,000 barrels.

Both domestic and foreign demand for lubricating oils was less in April than in March and stocks rose 141,000 barrels. Stocks of wax increased 9,679,000 pounds. Stocks of fuel oil east of California rose 1,171,000 barrels.

Western Refiners Cut Gasoline Output, Price Up Quarter Cent Since May 1

By J. C. Chatfield
N. P. N. STAFF WRITER

FROM a manufacturing standpoint alone there appears to be no reason why gasoline should be sold today by refiners at an unprofitable price. This is true for the Mid-Continent field—the scene of the present overproduction of crude oil—as well as for the country as a whole.

Although gasoline prices in the Mid-Continent field are almost down to the low levels which prevailed in the worst periods of 1923 and 1924, there is much less evidence of distress among refiners such as is caused by burdensome stocks. In the country as a whole gasoline stocks are much lower in terms of days supply and in the Mid-Continent field particularly stocks are lower both in actual volume and in terms of days supply, than in 1923 and 1924.

The latest report of the U. S. Bureau of Mines shows gasoline stocks at Oklahoma and Kansas refineries on April 30, to be 193,000,000 gallons. On April 30, 1923, gasoline stocks in Oklahoma and Kansas were 258,000,000 gallons, in 1924, 237,000,000 gallons, in 1925, 184,000,000 gallons and in 1926, 165,000,000 gallons. The increase in current stocks over last year at Mid-Continent refineries is relatively small when it is considered that exports have been below the level of last year during the first quarter and weather conditions were unfavorable during a large part of the time.

MID-CONTINENT refiners began the year with a heavy production schedule. Crude runs were kept high in expectation of a large increase in business. With bad weather affecting consumption adversely and the rapid development of the flush production of Seminole breaking down the crude market, refiners constantly were anticipating lower material costs and shading prices.

In recent weeks refiners in the Mid-Continent have executed an abrupt about face. They have lowered their manufacturing schedules by shutting down part of their cracking stills and reducing their charges of crude to stills. This has resulted in a much better balance between supply and demand for refined products and has brought about a stabilization of prices with a fairly strong upward tendency.

During the four weeks ending May 28, the 124 refiners in the Mid-Continent field which report weekly to National Petroleum News, showed a daily average crude charge of 279,769 barrels per day.

IN THE corresponding four weeks a year ago the same group of plants, representing about 60 per cent of the total operating capacity in the field, reported an average crude charge to stills of 276,038 barrels per day. Daily average crude runs for May of this year were thus only 1.35 per cent greater than a year ago. Crude runs at the same plants in April of this year averaged 282,596 barrels per day. This was nearly 3,000 barrels per day greater than the May runs.

The effect of the more careful manufacturing schedule has been apparent in the refinery market in Group 3. The current price for 58-60 U. S. Motor gasoline is more than a quarter of a cent above the average at the beginning of May.

A striking picture of the retrenchment among Mid-Continent refineries in gasoline production may be seen in Table No. 1 which gives the total gasoline production of the 124 plants for the first 21 weeks of the year on a cumulative basis. At the end of the first four weeks the gasoline production of reporting plants was 13.1 per cent greater than their production in the first four weeks of 1926.

AT THE end of eight weeks they had increased their production to a point where it was 16.1 per cent greater than for the corresponding eight weeks of last year. At the end of 11 weeks total gasoline production was 16.8 per cent greater than last year.

From that period forward Mid-Continent refiners have shown a tendency to curtail their operations. Production has been kept at about the level of demand or lower, since about the third week in March. At the end of 16 weeks operations gasoline production at the 124 plants was only 15.5 per cent greater than last year. At the end of 20 weeks it was down to 13.6 per cent above 1926 and the total up to May 27 was only 12.8 per cent greater than 1926.

In the current statistical bulletin of the Western Petroleum Refiners Association, dated June 4, H. K. Davis, statistician, has presented a study of gasoline stocks at all U. S. refineries in terms of days supply. Mr. Davis has advocated for a number of years that the proper method of figuring gasoline stocks is in terms of days' supply at the rate of consumption to be experienced in the future rather than in terms of current consumption or in terms of consumption during the past period.

HE BASES his argument on the fact that gasoline consumption is a constantly increasing factor so that the past record method is not accurate and that current figures may not be taken because of inequalities in demand from month to month.

Refinery gasoline stocks in terms of days supply at the future rate of consumption as prepared by Mr. Davis for the past four years are given in Table No. 2. The figures for March and April of this year are estimated on the basis of present trends of increase in consumption.

Table No. 1

Cumulative gasoline production at 124 refineries in the Mid-Continent field representing about 60 per cent of the operating capacity of the district, for the first 21 weeks of 1927 compared with corresponding period in 1926. Figures in gallons. Totals for previous weeks being carried forward in each case.

No. weeks	1926	1927	Per cent Increase 1927 over 1926
1	29,140,000	31,724,000	8.8
2	59,648,000	66,197,000	10.9
3	90,342,000	102,832,000	13.8
4	120,992,000	136,888,000	13.1
5	148,385,000	171,473,000	15.5
6	178,012,000	206,346,000	15.9
7	208,247,000	242,693,000	16.5
8	239,317,000	277,774,000	16.1
9	269,558,000	313,138,000	16.2
10	298,973,000	348,299,000	16.5
11	328,621,000	383,871,000	16.8
12	360,060,000	418,694,000	16.3
13	389,259,000	452,641,000	16.3
14	417,965,000	485,580,000	16.2
15	448,733,000	520,474,000	16.0
16	480,337,000	554,922,000	15.5
17	514,239,000	589,309,000	14.6
18	546,792,000	622,422,000	13.8
19	579,279,000	659,398,000	13.8
20	612,811,000	696,548,000	13.6
21	648,964,000	732,286,000	12.8

Table No. 2

Days supply of gasoline on hand at U. S. refineries at close of each month based on actual future consumption.

	1923	1924	1925	1926	1927
January	62	71	61	60	58
February	65	70	60	58	59
March	65	69	58	54	*56
April	64	68	55	51	*53
May	61	64	52	48	....
June	56	59	50	44	...
July	53	55	49	41	....
August	51	52	50	40	....
September	52	50	51	40	....
October	56	50	53	42	....
November	59	54	56	48	....
December	66	59	58	55	....

*Shipments of gasoline from U. S. refineries during the first four months of 1927 exceeded those of the same period a year ago by 9.7 per cent. Days supply shown is based on assumption that May and June shipments also will show an increase of 9.7 per cent over 1926.

Although this table shows an increase in stocks on Feb. 28, March 31 and April 30 of this year, the increase is not large. Stocks are much lower in the first quarter when compared with 1925, 1924 and 1923.

"An examination of these figures," Mr. Davis writes in his bulletin, "will offer convincing evidence that the refining industry, at least as recently as the close of April, was not in possession of any such vast over-supply of gasoline as many recent statements, both printed and oral, might lead one to believe.

"While it is true that the most recent figures show an inclination in the direction of inventories that are relatively higher in comparison with demand, and that this emphasizes the wisdom of a cautious examination of manufacturing policies still the situation could not well be termed out of hand. There is little in the statistical situation, taking the country as a whole, that should lead to the destruction of values to a point where manufacture becomes unprofitable.

"Regardless of the course of crude production, if present conditions are unsatisfactory, they must be attributed more to individual actions that affect the prosperity of refining groups, and the competition between certain groups that affects all groups, than to the collective manufacturing policies of the industry as a whole. We have our weak spots it is true, but are not in the deplorable situation so frequently suggested by our critics and too commonly believed by those who fail to examine the facts at hand."

West Virginia Oil Men Meet June 15-16

CHARLESTON, W. VA., June 1.—Additional features for the program of the annual convention of the West Virginia Oil Marketers Association to be held at the Kanawha Hotel here on June 15 and 16, have been announced by W. Walter McKee, sales manager, Elk Refining Co. here.

Besides T. A. Boyd and Warren C. Platt, who will speak on "Gasoline and Slaves" and "The Oil Man's Opportunity" respectively, these speakers are scheduled to appear:

H. M. Ewing, Philadelphia, Pa., who will talk on "Fire Prevention"; W. A. Milne, executive secretary, Ohio Petroleum Marketers Association, Columbus, O., whose subject is "From Cave Man to Unity"; and Ross B. Johnston, West Virginia Department of agriculture, Charleston, who will talk on "Advertising West Virginia."

Floyd B. Chapman, Huntington, W. Va., president of the association, will call the meeting to order. The address of welcome will be delivered by W. W. Wertz, mayor of Charleston.

A sight-seeing trip through Kanawha valley to Kanawha Falls and Hawk's Nest has been arranged for the visitors by the oil men of Charleston. A banquet with music and entertainers will conclude the first day's session. Election of president, vice president and 10 directors are on the second day's program.

North Carolina Jobbers Meet June 14

GREENSBORO, N. C., May 27.—The North Carolina Independent Oil Jobbers' Association will meet June 14 in Greensboro. This will be the first statewide meeting of the North Carolina jobbers. Talks on "The Future of the Independent Oil Jobber," and "Filling Station Problems" are being arranged.

It is expected more than 50 jobbers will attend. Proposed bills affecting the oil industry to be considered at the forthcoming session of the North Carolina legislature will be discussed.

The meeting will begin at 10 a.m. and will conclude with a dinner at 6:30 p.m.

Iowa Gasoline Tax Effective July 4

DES MOINES, June 4.—M. L. Long, secretary of the Iowa Independent Oil Men's Association, announced in this week's bulletin that the new 3-cent gasoline tax in that state takes effect on July 4, 1927. The new law provides for the oil man to pay his taxes on receipts in tank cars instead of on a retail sales basis as now, making an allowance for outage.

Wisconsin Jobbers to Meet June 8

Staff Special

MADISON, WIS., June 4.—Legislation is the main topic up for consideration of the Wisconsin Independent Oil Jobbers' Association when they hold their regular monthly meeting at the Park Hotel in Madison, June 8. Officials have arranged for some state senators to meet with the oil men.

The state senate of Wisconsin, on May 31, passed a bill which would raise the present gasoline tax rate of 2 cents to 4 cents. This bill has still to pass the house before it becomes a law but it is popular with the politicians. It provides for cutting automobile licenses to a flat $5 a car. They range from $11 to $30 a car now.

Proponents of this bill argue that it will save the state $200,000 a year by simplifying the automobile license system.

The meeting will be addressed by C. Y. Hinchie, advertising department of the I. O. M. A., Chicago.

Consumers Petroleum Co. Leases Big Storage

Staff Special

CHICAGO, June 4.—Consumers Petroleum Co., jobbers of industrial fuel oils in Chicago since 1925, this week came into possession of what they believe to be the largest fuel oil storage plant in the vicinity of Chicago. According to I. L. Schurman, president and general manager of the company, this calls for greatly increased distribution, more tank trucks and distributing equipment generally.

It is Mr. Schurman's purpose to continue to deal in heavy industrial fuels exclusively and not compete for domestic business in Chicago. The plant he procured is 500,000 gallons of storage consisting of seven upright tanks near the Chicago stock yards. Formerly it was used for animal oils by Armour & Co. It is served by the Chicago Junction Railroad with tracks on three sides of the plant.

Mr. Schurman has opened a downtown office at 360 North Michigan, room 601. He says he will serve customers all over the metropolitan district. Heretofore his operations have been limited to the south side of town where he rented storage.

Safety Men Meet Sept. 26-30

CLEVELAND, June 7.—Petroleum section of the National Safety Council will hold its annual meeting Sept. 26 to 30 in the Stevens hotel, Chicago.

Oil Sales Boosted by Station Quotas and Means for Quick Handling

By Roger B. Stafford
N. P. N. STAFF WRITER

A FEW years ago a motor truck salesman decided to retail gasoline and motor oils. He knew little about these commodities but he was confident of his salesmanship. After operating a station in Atlantic City which did not satisfy his ambitions he came to Newark and acquired three stations. Customers were rather hard to hold. Then as now they were fickle with their patronage, so the salesman considered means of binding the customers to the stations. The result was the Co-Service Oil Co. and a customer ownership plan.

Today the Co-Service Oil Co. has 5,000 stockholders, 23 service stations in and around Newark, a deep-water terminal with storage for 2,500,000 gallons of gasoline, kerosene, fuel and motor oils, 11 trucks, and some pretty good ideas about merchandising and credits. The truck salesman is still head of the enterprise as president and general manager but he still insists he is not an oil man.

Alex Smidth is the father of the Co-Service company. He creates and executes its merchandising policies, and generally supervises the business. But he hires experienced oil men to look after the oil end, among whom is J. H. Chambers, formerly with the Tide Water Oil Sales Corp.

Merchandising motor oils is Smidth's particular hobby. Motor oil is sold only from quart bottles at the service stations, except some oil in cans when a customer wishes to take it away.

During May a campaign was made to sell oil in drums and half drums with which the buyer was supplied a self-measuring pump free. A quota of 1,000 drums was set for the month and every service station salesman hustled to place the sales well ahead of the quota and did.

THE salesmen were divided into six teams. The man that sold the most oil in each team was given $25 prize and the winning team was given $50, making the total cash prizes $200. Each man also was paid 3 cents a gallon for every gallon sold if his total was between 150 and 250 gallons; 3¼ cents if his total was between 251 and 500 gallons; 3½ cents if between 501 and 750 gallons; 3¾ cents if between 751 and 1,000 gallons, and 4 cents a gallon if sales exceeded 1,000 gallons.

All customers which included 5,000 stockholders, were solicited and salesmen solicited business when not on duty at the stations.

Co-Service company has no motor oil bulk storage at its 23 stations. All oil is bottled at the bulk storage plant by machine which fills 60 quart bottles a minute at maximum speed. The bottles are covered with metal screw caps on which the grade of oil is stamped. The bottles are then put in cases of 12 each and are ready for delivery by stake truck to the service stations.

Each service station has a motor oil daily quota and if it should continuously fail to sell its quota an investigation is made to ascertain the trouble. The quotas are 2½ per cent of the stations' average gasoline sales. At some stations, Mr. Smidth said, gasoline sales average 3,000 gallons a day. That would mean motor oil sales should be 25 cases of 300 quarts. He said all sales averaged 2,000 bottles a day.

Mr. Smidth gave two reasons for selling oil only through bottles and having the bottling done at the bulk plant: 1, economy, and 2, cleanliness. He said last year he believed the company saved $10,000 through the use of bottles. This sum covered losses from leakage and spillage, and handling costs, and averaged about $500 a station because the company had only 19 stations last year. Time saved at the service station included that of filling storage tanks and then bottles. Considerable handling time is saved at the bulk plant, Mr. Smidth said, because attention had to be paid only to the feeding of bottles into the machine, taking them out, and screwing on the caps.

When a bottle is filled the flow of oil from the machine's supply tank is automatically cut off. The supply tank has a float which automatically opens and closes a valve in the line from the main storage tank. Dripping of oil from the filler tubes is prevented by a vacuum system. The two operators—one who puts in and takes out bottles and the other who caps the filled bottles and puts them in cases—do not touch the oil, so the bottles are free from outside smears. The cases are like those used by dairies.

When the cases reach the service stations they may be placed in racks or on shelves for display. The service station men have only to remove the caps and screw on nozzles. The bottles may be replaced in the cases as emptied and are ready for collection when the next supply of oil is delivered. Mr. Smidth said the loss from bottle breakage was trivial.

THE service station salesmen need not get a drop of oil on their hands or clothes, Mr. Smidth said, and declared this was an important feature in dealing with the ever increasing woman trade. Woman drivers, with rare exceptions, wear good clean clothes and do not want any oil spilled around their cars, Mr. Smidth said. Many of them are on their way to parties or shopping and intent on keeping spotless.

"Women come into our stations with handbags that cost from $10 to $100," Mr. Smidth said. "If the salesman has dirty, greasy hands, he is bound to hand her dirty, greasy change. They don't like that. It's bad practice, at least, because it will cause them to go elsewhere to buy gasoline."

The company has a station downtown where cars are stored and washed as well as oiled and greased. The washers and polishers get 50 per cent of the $2 to $2.75 a car charge. The washers are supplied with water, the wash rack space and semi-permanent washing equipment. They must furnish their own soap, kero-

Centralize Greasing

"I PREDICT the day is coming when the oiling and greasing business will be divorced from the gasoline station," declared Alex Smidth, president and general manager, Co-Service Oil Co., Newark, N. J., which has 23 service stations.

"The woman driver is becoming a more important factor as a service station patron and we know we have lost trade of women who have objected to taking chances of getting their clothes soiled by dealing with a station salesman who has just drained a crankcase.

"Where possible we keep the gasoline selling and the oiling and greasing business separated, but that can't be done at every station because of the cost."

Mr. Smidth said he believed oil companies would continue to do oiling and greasing but that they would try to separate that service from the gasoline selling station in every possible case.

sene, polish, sponges and chamois skins.

All washing is done by men but women do the drying and polishing. The washers earn up to $40 a week and the polishers $16 to $18 a week. A manager in charge of the washing department is paid $135 a month and 3 per cent commission.

Three grades of gasoline are handled at all stations. A benzol blend sells at 5-cent premium and Ethyl gasoline at 3-cent premium. A regular grade sells at the posted price of the Standard Oil Co., of New Jersey. However, stockholders in the company get their gasoline at the service station at the tank wagon price.

Stockholders pay $25 a share for their stock and holdings are limited to one no par non-voting share each. The voting stock of which there are 1,000 shares is closely held by Mr. Smidth and his business associates.

Mr. Smidth said the business derived from these non-voting stockholders averaged about $200 a year which means the company is assured of about a $1,000,000 gross business from those financially interested. Until last year the company paid $1.50 a year dividend on the non-voting stock but dividends were suspended in 1926 because $350,000 was spent in acquiring property, including the deep-water terminal from the Ballard Oil Co.

Whenever another service station is contemplated, stock salesmen sell 300 to 400 shares in the vicinity of the proposed station site, Mr. Smidth explained. This number of stockholders assures the station considerable patronage as soon as it is opened. Salesmen receive $7 a share commission for their sales, he said, and it was not an easy task to dispose of the stock in one-share lots. It would be easier to sell more stock if the limit were not strictly adhered to, he said.

This stock selling is a merchandising scheme as well as a financing plan. Some of the stockholders are commercial concerns which have truck fleets. This guarantees to the company some sizable accounts. The company has other commercial accounts to which it makes tank wagon deliveries and lends it handling equipment. Co-Service has no dealer accounts, Mr. Smidth said.

Each stockholder is given a certificate and a numbered identification card which he must carry with him to show the service station salesman when he buys gasoline and oil if he wishes the discount, provided he pays cash. On charge accounts the stockholder's number must appear on sales slips.

The company carries about 2,000 charge accounts and some days has as many as 1,200 charges to individual accounts. The posting is done with a machine which prints the date, purchases, credits, or balances brought forward with the total of the account and the number of the service station charge slip, on a statement form and a control card. The customer's name and address already has been printed on the back of the statement with an addressing machine and the total of the account is brought up with each posting. When the bills are sent out it is necessary only to pull them out of the filing case, fold them once and put them in "window" envelopes, seal and stamp them.

Two girls send out the bills twice each month. It requires only one and a half hours for the two to get the 2,000 bills ready for the mail.

Mr. Smidth said the average time for collecting each half month's bills was 23 days. He employs a credit man at $6,000 a year, which is relatively a high salary for a 23-station business, but said the company last year lost only $350 on accounts that amounted to more than $1,000,000.

Part of the Co-Service stations are on leased ground and part on ground owned by a subsidiary, the Co-Service Realty Co. The oil company receives its gasoline, kerosene and fuel oil by barge from a New York harbor refinery and its lubricating oils in tank cars. It operates 11 trucks, two of which are stake. Of the nine tank trucks, three are in gasoline service all year and two in fuel service all year. The other four are swung from one commodity to another as demand requires.

Truck tanks are of two sizes, 900- and 1,500-gallon. Each tank has three compartments so that a dump of all three gasolines handled at each service station may be made at once if necessary.

Credit Without Losses

LAST year Co-Service Oil Co., Newark, N. J., lost $350 on credit accounts that amounted to more than $1,000,000, Alex Smidth, its president and general manager, is proud to reveal. This is a loss of only 35/100 of a mill on each dollar's credit extended. The average time for collection of all bills was 23 days.

How was it done? First, Mr. Smidth hired a $6000 credit man and gave him full authority and responsibility for credit granting and collections. Second, he joined the retail credit association so his credit manager could have all possible credit information about Newark people. Third, he used a simple system of keeping accounts so the standing of any credit customer's account might be ascertained in one or two seconds. Fourth, he didn't back up when some acquaintance sought to override the credit manager's determination to collect an account.

"I tell the special favor seekers the credit manager's business is the company's business and my friendship doesn't enter into the business," Mr. Smidth said. "If they haven't the money to pay their bill, I tell them I'll lend them the money but I can't override the credit manager. They usually then make some satisfactory arrangement about the account."

Free Service Overdone

"TOO much free service is detrimental to a gasoline selling business," said Alex Smidth, Co-Service Oil Co., Newark, N. J. "A motorist may drive into a station one day when no other customers are present. One salesman checks the water, another the tires, one inquires about his oil while another inspects the gasoline tank or wipes off his windshield. That makes a wonderful impression.

"But a day or two following, the same motorist may go into the same station when several cars are there to be served. The salesmen look after their profitable trade and do not show this one customer the attention they previously did. The motorist suspects that he was not as welcome as before, or that the station is slipping in courtesy, never thinking that the pay business must be looked after first and other customers may be as anxious as he to get a tankful of gasoline quickly.

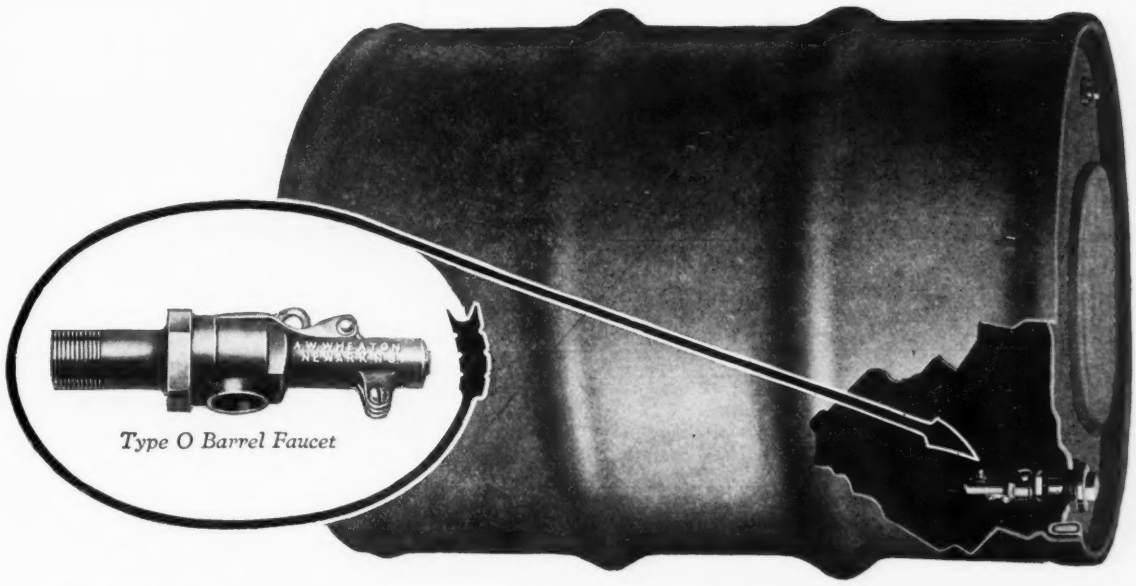
"Ground is becoming too costly to devote a lot of it to unprofitable service. In a business where the profit is as limited as it is in gasoline selling, too much free service will kill the business. I advocate courtesy and alertness but not too much service without compensation."

Well South of World Pool Shut In

HOUSTON, June 2.—The P. H. Williams et al No. 1 well, a mile south of World pool production in northern Crockett county, remains shut in for storage with a hole full of oil at 2575-2577 feet. The test, in sec. 53, E. L. & R. R. block BB, found the pay higher than any producing well in the World pool and opens new territory for exploitation.

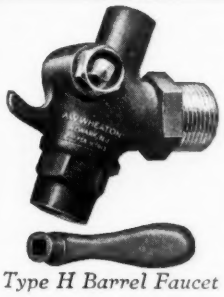
Humble Oil & Refining Co., and the Marland Oil Co. of Texas have offset acreage out of the Williams ranch to the north of the well; and Gulf Production Co., similarly, has a virtually proved leasehold to the northeast.

Oil in the Williams well tests 33.1° A. P. I. gravity.



3 Wheaton Barrel Faucets

They're Little Faucets with Big Reputations


Type H Barrel Faucet

THEIR names are H, K and O. And they are made of the same stuff as all other Wheaton Faucets: special-analysis brass alloy—tempered, toughened and tested. They are machined, fitted and finished in regular Wheaton fashion. H and K are practically miniatures of the popular Wheaton Type A Tank Truck Faucet, while O is designed for shipping within the barrel or drum. And, as with all Wheaton Faucets, they are self-closing—and never leak.

Type K Barrel Faucet

Type H is an unusually strong and sturdy little faucet—designed for use on both barrels and drums. The wrench, shown in the illustration above, for operating the valve, is supplied with Type H. Sizes ⅝ and ⅞-inches.

Type K Barrel Faucet is similar to Type H, except that the valve is operated by a *handle attached to the cam pin.* This handle can be *locked,* as shown in the illustration above, to assure protection. Sizes: ⅝ and ⅞-inches.

Type O is adapted for shipping within the barrel, by attaching to, or screwing in, a plug and inserting through the bung. A brass cup on the end of the plunger prevents the leather washer from spreading and assures perfect seating. Type O is made in ¾-inch size only.

Send for samples today. If not entirely satisfactory, you may return for refund or credit. Also ask for illustrated catalog.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Wheaton

FAUCETS • VALVES • JOINTS • COUPLINGS • FILLERS • NOZZLES • FITTINGS

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended June 3 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended June 3	Total Week Ended May 6
Plants Reporting	23	46	41	14	124	124
Crude Cap. (Bbls.)	106,200	165,900	144,300	53,700	470,100	462,100
Cracking Capacity	29,000	45,800	15,750	20,200	110,750	102,750
Da. Av. Crude Runs	49,433 — 11.1	97,364 — 14.4	66,340 + 3.4	43,224 + 1.7	256,361 — 7.1	272,461
Da. Av. Other Oils	4,546 — 20.0	1,340 — 13.3	4,827 +142.0	1,258 — 12.4	11,971 + 12.3	16,752
GASOLINE—Gallons						
Stocks, May 27	15,149,000	56,791,000	18,739,000	4,559,000	95,238,000	101,310,000
Prod. 5-27 to 6-3	7,425,000 — 11.6	12,747,000 — 20.1	7,340,000 — 5.6	3,185,000 — 11.7	30,697,000 — 14.1	33,113,000
Ship. 5-27 to 6-3	7,672,000 — 6.3	17,561,000 + 0.6	7,402,000 — 7.1	3,463,000 — 17.1	36,098,000 — 4.5	35,452,000
Stocks, June 3	14,902,000 — 1.6	51,977,000 — 8.5	18,677,000 — 0.3	4,281,000 — 6.1	89,837,000 — 5.7	98,971,000
Ratio Sales to Prod.	103.3%	137.8%	100.8%	108.7%	117.6%	107.1%
KEROSENE—Gallons						
Stocks, May 27	2,420,000	7,706,000	2,112,000	948,000	13,186,000	14,549,000
Prod. 5-27 to 6-3	1,758,000 — 2.5	2,460,000 — 9.5	1,737,000 + 22.2	435,000 — 23.4	6,390,000 — 1.8	6,333,000
Ship. 5-27 to 6-3	1,087,000 — 33.8	4,351,000 +455.0	1,328,000 — 21.8	476,000 + 1.5	7,242,000 + 57.7	7,423,000
Stocks, June 3	3,091,000 + 27.7	5,815,000 — 24.5	2,521,000 + 19.4	907,000 — 4.3	12,334,000 — 6.5	13,459,000
Ratio Sales to Prod.	61.8%	176.9%	76.9%	109.4%	113.3%	117.2%
STOVE DISTILLATE—Gallons						
Stocks, May 27	2,658,000	2,501,000	790,000	33,000	5,982,000	6,159,000
Prod. 5-27 to 6-3	208,000 + 7.2	172,000 — 55.6	300,000 — 2.9	54,000 — 16.9	734,000 — 23.1	753,000
Ship. 5-27 to 6-3	82,000 +382.4	306,000 — 34.1	303,000 — 3.2	63,000 — 35.7	754,000 — 15.5	953,000
Stocks, June 3	2,784,000 + 4.7	2,367,000 — 5.4	787,000 — 0.4	24,000 — 27.3	5,962,000 — 0.3	5,959,000
Ratio Sales to Prod.	39.4%	177.9%	101.0%	116.7%	102.7%	126.6%
GAS OIL—Gallons						
Stocks, May 27	5,094,000	42,086,000	11,789,000	6,704,000	65,673,000	66,063,000
Prod. 5-27 to 6-3	1,461,000 + 9.4	3,467,000 + 19.6	2,313,000 + 75.5	1,685,000 + 12.0	8,926,000 + 26.5	9,758,000
Ship. 5-27 to 6-3	1,230,000 — 12.3	3,988,000 + 70.4	1,901,000 +137.9	1,005,000 — 17.2	8,124,000 + 41.1	11,754,000
Stocks, June 3	5,325,000 + 4.5	41,565,000 — 1.2	12,201,000 + 3.5	7,384,000 + 10.1	66,475,000 + 1.2	64,067,000
Ratio Sales to Prod.	84.2%	115.0%	82.2%	59.6%	91.0%	120.5%
FUEL OIL—Gallons						
Stocks, May 27	12,144,000	33,705,000	22,463,000	10,026,000	78,338,000	82,653,000
Prod. 5-27 to 6-3	5,294,000 — 19.0	4,769,000 — 35.7	8,917,000 + 4.4	6,978,000 + 8.3	25,958,000 — 10.3	29,410,000
Ship. 5-27 to 6-3	6,097,000 — 5.1	5,005,000 — 37.4	8,497,000 — 6.5	6,061,000 — 4.5	25,660,000 — 14.0	29,388,000
Stocks, June 3	11,341,000 — 6.6	33,469,000 — 0.7	22,883,000 + 1.9	10,943,000 + 9.1	78,636,000 + 0.4	82,675,000
Ratio Sales to Prod.	115.2%	104.9%	99.3%	86.9%	98.9%	99.9%

Gasoline Produced by Various Methods, Week Ended June 3

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	4,813,000	64.8	9,411,000	73.8	6,221,000	84.7	896,000	28.1	21,341,000	69.5
Cracked	2,153,000	29.0	2,103,000	16.5	959,000	13.1	1,827,000	57.4	7,042,000	23.0
Natural	459,000	6.2	1,233,000	9.7	160,000	2.2	462,000	14.5	2,314,000	7.5
TOTAL	7,425,000		12,747,000		7,340,000		3,185,000		30,697,000	

+ or — columns are % change over previous week.

Gasoline Stocks Recede Though Shipments Fall

TULSA, June 7
Staff Special by Telegraph

GASOLINE stocks at 124 Mid-Continent refineries were reduced 5,400,000 gallons in week ended June 3, according to reports to NATIONAL PETROLEUM NEWS. Kerosene and distillate stocks also were reduced. Gas and fuel oil stocks increased slightly.

The large cut in gasoline inventories resulted from further curtailment of crude runs in Oklahoma and Kansas. Minor increases in crude charges were reported by Texas, and Louisiana—Arkansas operators.

Crude runs at all reporting plants averaged 256,361 barrels daily, compared with 275,988 barrels the preceding week, a reduction of 19,627 barrels. Kansas refiners reduced daily average crude runs 6,200 barrels and Oklahoma refiners 16,335 barrels.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended June 3. Change in stocks figured from May 6.

Gasoline

	Gallons
Production	140,561,000
Shipments	149,695,000
Net change in stocks	—9,134,000
Ratio sales to production	106.5%

Kerosene

Production	26,354,000
Shipments	27,479,000
Net change in stocks	—1,125,000
Ratio sales to production	104.3%

Stove Distillate

Production	3,510,000
Shipments	3,507,000
Net change in stocks	+3,000
Ratio sales to production	99.9%

Gas Oil

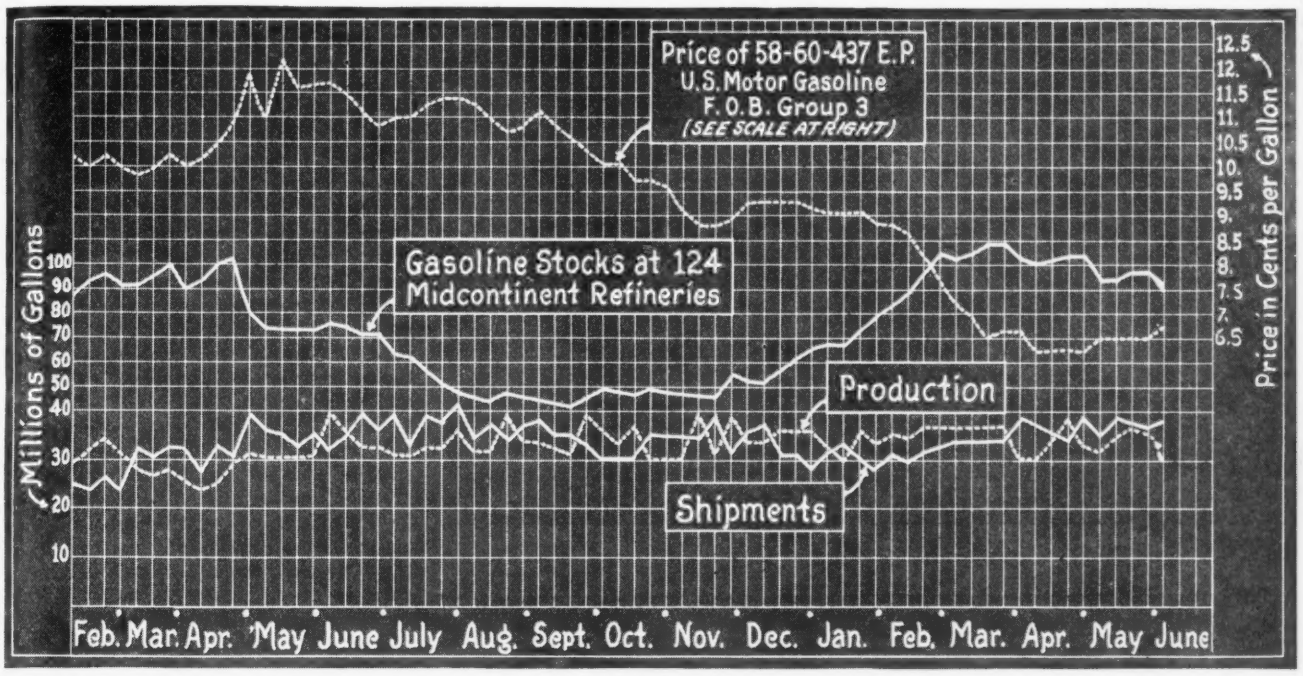
Production	30,696,000
Shipments	28,288,000
Net change in stocks	+2,408,000
Ratio sales to production	92.2%

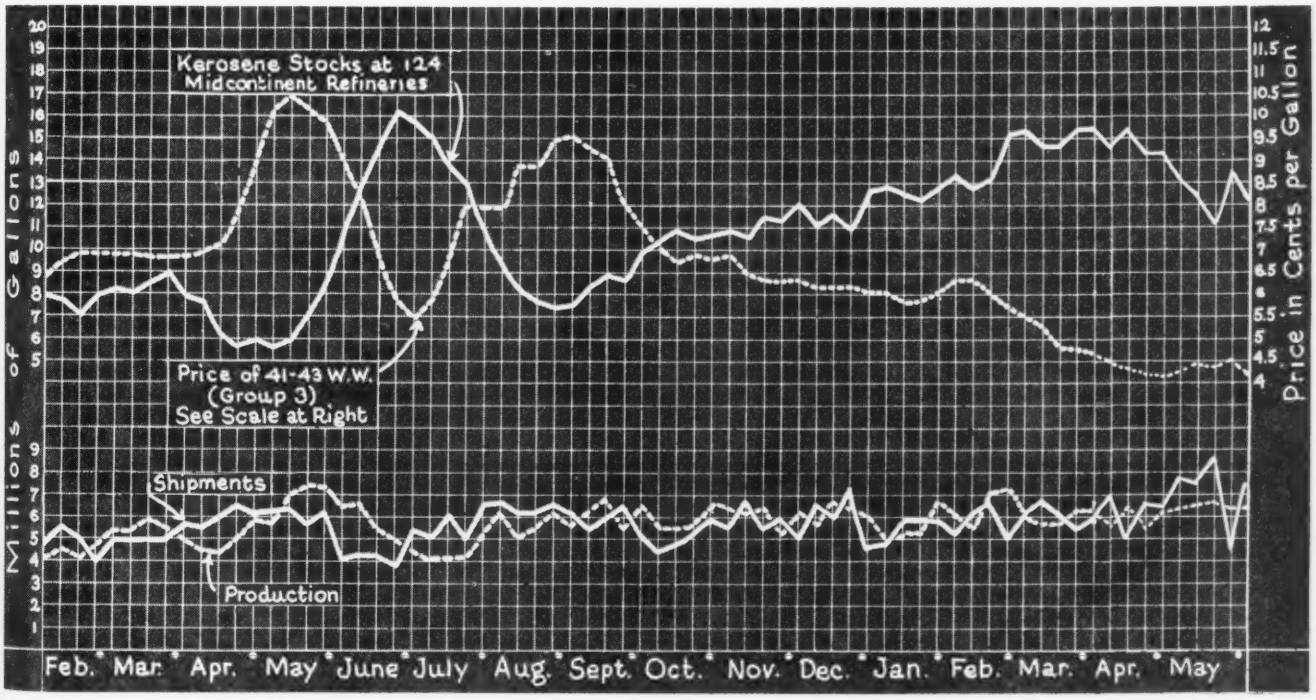
Fuel Oil

Production	114,684,000
Shipments	118,723,000
Net change in stocks	—4,039,000
Ratio sales to production	103.5%

Barometer of Mid-Continent Refinery Market—Week Ending June 3

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News


Price of 58-60-437 E.P.
U.S. Motor Gasoline
F.O.B. Group 3
(SEE SCALE AT RIGHT)
Gasoline Stocks at 124
Midcontinent Refineries
Production
Shipments
Millions of Gallons
Price in Cents per Gallon
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Kerosene Stocks at 124
Midcontinent Refineries
Price of 41-43 W.W.
(Group 3)
See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May

Daily average increased in crude runs at Texas plants was 2,000 barrels, and in Arkansas and north Louisiana 1,000 barrels.

Daily average crude runs for last week were 23,000 barrels less than average crude runs 6,200 barrels and May 27 and 26,000 barrels less than April average. A year ago average runs for May were 276,038 barrels daily more than runs last week.

Gasoline shipments last week totaled 36,098,000 gallons, a reduction of 1,700,000 gallons, or 4.5 per cent, from shipments in the week ended May 27. With heavy cut in crude runs output of gasoline was reduced 14.1 per cent to 30,697,000 gallons. Average weekly gasoline production of the 124 plants in May was 35,744,000 gallons.

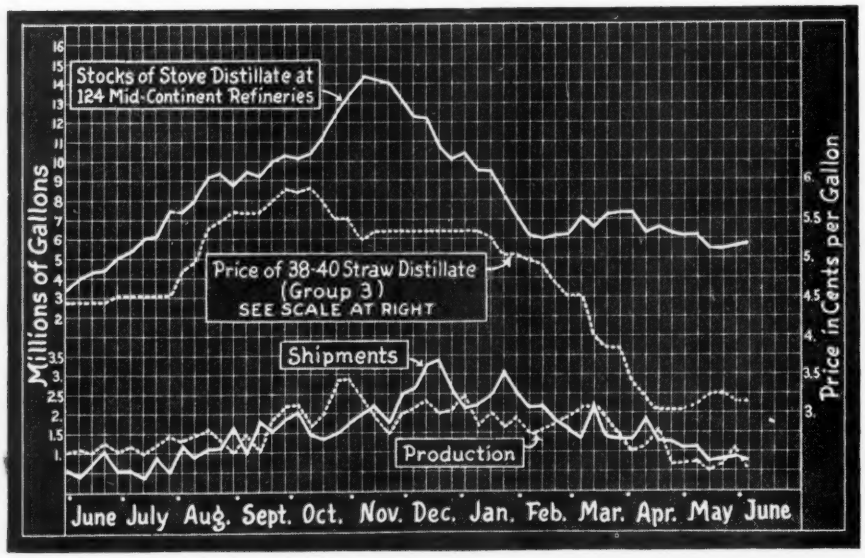
Oklahoma refiners reported the heaviest reduction in gasoline stocks, 4,600,000 gallons. Kansas refiners reduced stocks 247,000 gallons. Texas 162,000 gallons, and north Louisiana and Arkansas 278,000 gallons.

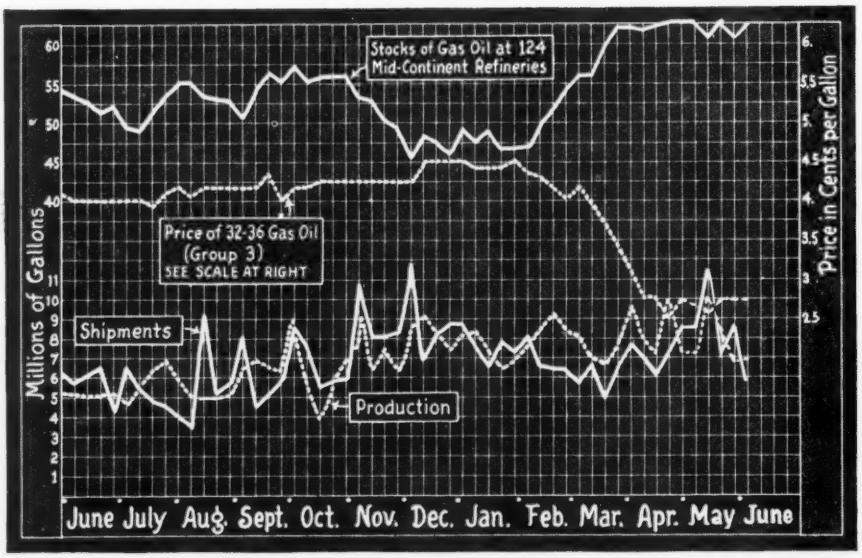
Shipments of kerosene increased 57.7 per cent over previous week is shipments or 2,649,000 gallons to 7,242,000 gallons. Production totaled 6,390,000 gallons, causing a reduction of stocks to 12,334,000 gallons.

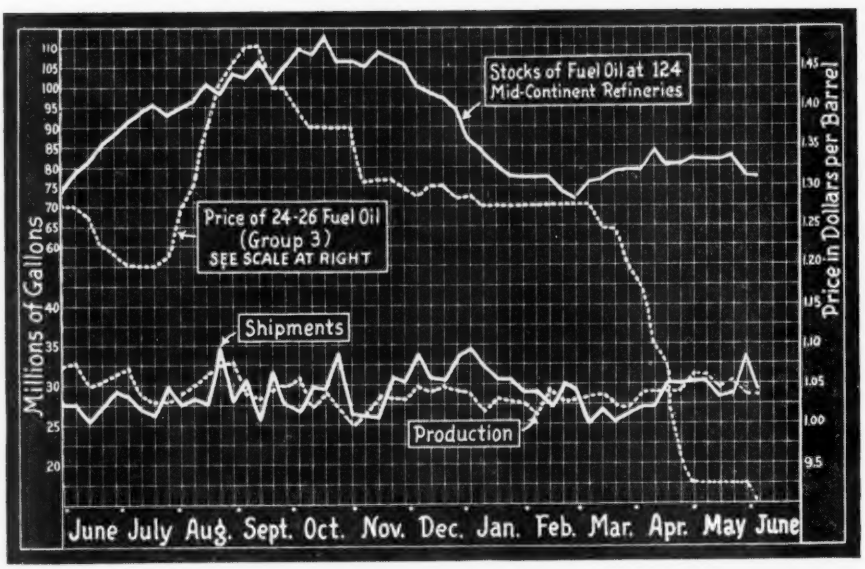
Production of stove distillate was cut to a new low for the year, 734,000 gallons. The previous week is production was 955,000 gallons. Shipments fell 140,000 gallons to 754,000 gallons and stocks were lowered 20,000 gallons to 5,962,000 gallons.

Barometer of the Mid-Continent Refinery Market

Week ending June 3


Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June


Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) SEE SCALE AT RIGHT
Shipments
Production
Millions of Gallons
Price in Dollars per Barrel
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Gallon of Gasoline Is "Birthday" Treat

OTTAWA, ONT., June 6.—Checks good for one gallon of gasoline were issued by Beach Motors, Ltd., here as a birthday gift to Ottawa motorists on the company's sixth birthday in May.

These checks, printed in regular check form, accompanied a multigraphed letter mailed out to all car owners in the city. The letter invited every motorist to stop at the company's stations and with every purchase of four gallons of gasoline, one gallon was given free to those holding checks. The check was endorsed by the customer in the usual manner, and was drawn on the "Bank of Beach."

Interest in these "birthday parties," as the company calls them, is first aroused by six-inch reminder cards in the form of a private post card on which is reprinted the calendar of the current month. The "birthday" date is in red. The reverse side of the card is a blotter and the upper edge is marked off for a six-inch rule.

The cards are mailed to car owners, calling their attention to the birthdays, to the products and services the company furnishes. Water for radiators and batteries, and air for tires, are among the services which the motorist is invited to take advantage of.

The company puts out a booklet for patrons entitled "From the Well to Your Car!" The book shows that, in November, 1922, when the company first sold its B. S. Q. gasoline in Ottawa, 7513 gallons were put out. In April, 1927, gallonage was near 60,000.

The leaflet gives the reader a glimpse of oil industry in 12 pages. It was compiled and published in answer to many inquiries the company had received as to how gasoline is handled from the time it is crude in the well until it is the finished product which goes into the motorist's tank.

The company operates two distributing stations, its first one being called the "Automobile Hotel." Olin A Beach is president.

A. P. I. Accounting Committee To Meet

NEW YORK, June 4.—Important accounting matters will be discussed at the general meeting of the American Petroleum Institute's committee on uniform methods of oil accounting which will be held at the Stevens Hotel, Chicago, on June 27, according to the Institute.

KENOSHA, WIS.—Donnelly-Hidlay Oil Co. opened a new service station here on April 1 and one at Winthrop Harbor, Ill., on May 21, according to E. C. Hidlay, president.

The Filling Station Needs A Hardie

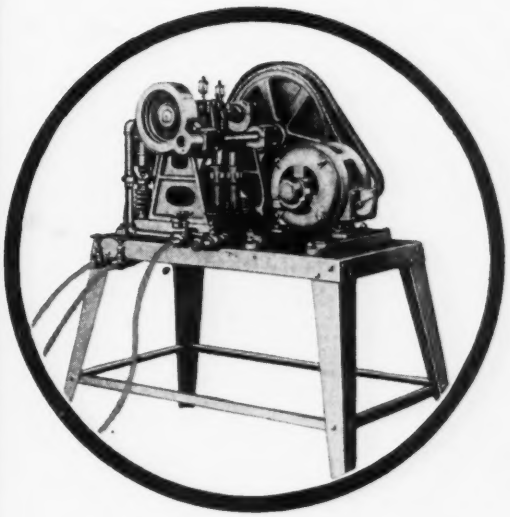
NO question about it—any filling station, anywhere, can make money washing automobiles. This is the biggest new profit opportunity before the gas and oil trade today. No other investment will pay the dividends day-in-and-day-out that the filling station can earn in otherwise idle time with a power car washer.

But it must be a dependable washer with ample capacity, and a long life of trouble-free performance built into it. Undersized, under - powered, cheaply built washers will not do. When you buy a car washer examine the specifications. Know how many gallons of liquid the washer will discharge per minute and at what pressure. Use the Hardie as the standard of comparison. A two-gun Hardie will give you twelve gallons per minute at 300 pounds pressure. It is absolutely self-oiling yet there are no enclosed, inaccessible parts. It represents years of experience in building such machinery. It will enable you to get every dollar of the big, new profits in car washing. Find out all about the Hardie. Four models—one-gun to six-gun capacity. We will gladly send you all the facts.

For Sale by Leading Jobbers Everywhere

THE HARDIE MFG. COMPANY

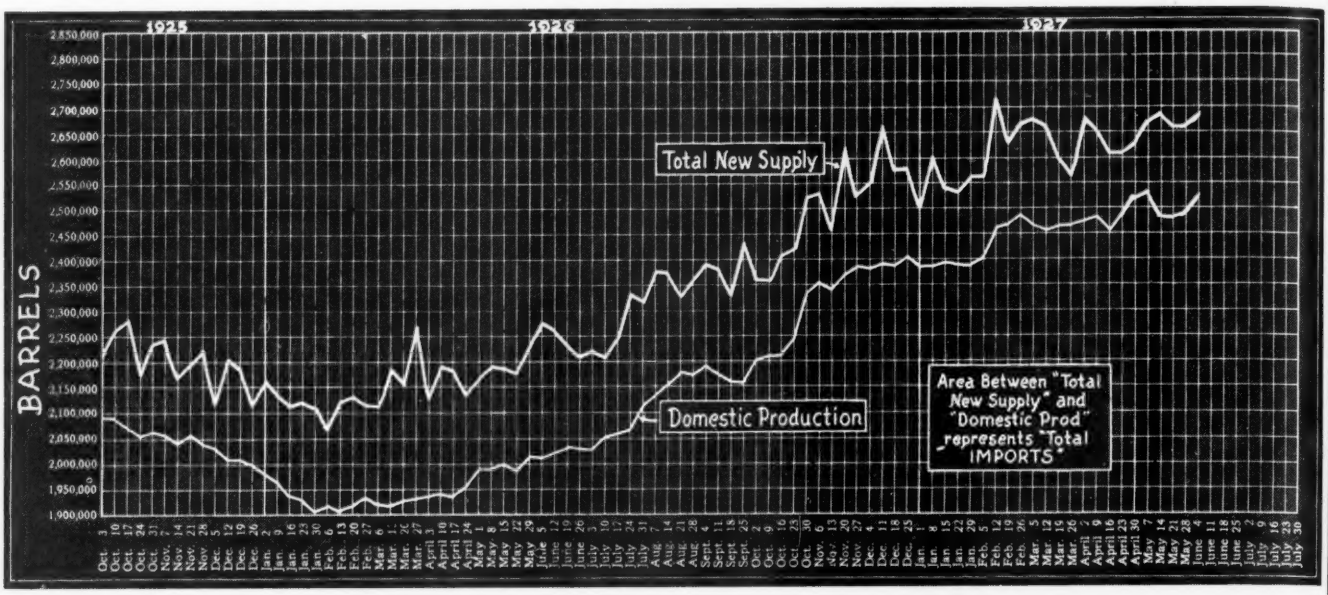
Main Office and Factory, Hudson, Mich.
Western Factory, Portland, Ore.
Canadian Factory, Petrolia, Ontario
Branches: 222 No. Los Angeles St., Los Angeles, Calif. 1780 Broadway, New York
Export Department. 120 Madison Avenue
Detroit



A *three-cylinder* pump in every Hardie — ample, constant pressure under all conditions.

HARDIE
DEPENDABLE CAR WASHER

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

Production Summary

	June 4	May 28
Production east of Rockies	1,870,900	1,872,300
Decrease		1,400
Total Production in U. S.	2,507,300	2,498,300
Increase		9,000
Crude Oil Imports	178,000	181,714
Decrease		3,714
Total Crude Supply	2,685,300	2,680,014
Increase		5,286

OKLAHOMA

	June 4	May 28
North Braman	4,950	5,650
South Braman	3,350	3,350
Blackwell	3,800	3,800
Hubbard	7,750	7,800
Thomas	5,400	4,450
Tonkawa	21,950	22,750
Garber	14,300	14,850
Burbank	45,550	44,450
Osage, outside Burbank	32,950	33,750
Watchorn	2,450	2,450
Cushing	21,500	21,450
Yale Jennings	11,650	11,700
Davenport	3,350	3,400
Bristow-Slick	27,150	27,100
North Okmulgee	17,100	17,150
Lyons-Deaner	5,500	4,400
Stroud	1,400	1,400
Cromwell	12,650	12,650
Papoose	7,100	6,850
Wewoka	19,050	19,100
Seminole	296,750	293,550
Earlsboro	63,750	63,300
Duncan district	7,050	7,000
Graham	7,900	7,900
Fox	1,850	1,850
Healdton	14,900	14,900
Hewitt	10,000	10,000
Scholem-Alechem	16,700	15,750
Others	63,700	64,450
Total Oklahoma	751,500	747,200
Increase		4,300

KANSAS

Greenwood County	37,500	38,000
Florence-Covert	1,800	1,800
Peabody-Elbing	3,750	3,750
Eldorado-Tonawanda	13,700	13,700
Augusta-Fox-Bush	4,400	4,400
Rainbow Bend	2,400	2,400
Russell	2,950	3,050
Churchill	18,550	19,400
Others	28,700	28,700
Total, Kansas	113,750	115,200
Decrease		1,450

NORTH LOUISIANA

	June 4	May 28
Homer	5,150	5,200
Haynesville	7,700	7,750
Caddo, light	10,050	9,650
Caddo, heavy	4,500	4,400
De Soto, Red River	3,900	4,300
Elm Grove	700	650
Bellevue	1,400	1,400
Cotton Valley	5,650	5,650
Urania	8,050	8,150
Pleasant Hill	400	.....
Total, North Louisiana	47,500	47,150
Increase		350

ARKANSAS

El Dorado	6,300	6,350
Smackover, light	11,300	10,950
Smackover, heavy	88,600	89,700
Stephens	1,400	1,350
Nevada	1,450	1,450
Lisbon	3,850	3,850
Others	100	100
Total, Arkansas	113,000	113,750
Decrease		750

TEXAS (Outside Gulf Coast)

Panhandle District

Carson County	12,800	13,250
Hutchinson County	112,600	107,350
Gray County	12,800	13,950
Wheeler County	2,200	2,850
Others	50	50
Total, Panhandle District	140,450	137,450
Increase		3,000

North Texas

Burkburnett	12,500	12,650
Wilbarger	13,000	13,050
Iowa Park and K-M-A	3,500	3,650
Wilbarger	13,000	13,050
Archer County	30,000	30,100
Montague-Cooke	14,550	14,700
Others	850	850
Total North Texas	87,450	88,200
Decrease		750

West Central Texas

	June 4	May 28
Stephens County	8,800	8,950
Eastland-Desdemona	7,050	7,250
Brown County	28,800	25,900
Coleman County	1,200	1,200
Callahan County	3,900	4,000
Shackleford County	11,450	11,650
Young County	8,500	8,700
Throckmorton County	3,000	3,000
Palo Pinto County	1,700	1,900
Others	1,200	.....
Total, West Central Texas	75,600	72,550
Increase		3,050

West Texas

Jones County	2,250	2,400
Mitchell and Scurry Counties	3,650	3,700
Howard County	2,700	2,900
Reagan County	26,400	26,650
Crane and Upton Counties	65,650	62,250
Crockett County	1,200	.....
Pecos County	13,150	16,650
Others	2,800	.....
Total, West Texas	117,800	114,550
Increase		3,250

East Central Texas

Mexia	11,000	11,100
Currie	600	600
Richland	900	900
Wortham	3,000	3,100
Corsicana-Powell	19,000	19,050
Nigger Creek	4,000	4,100
Total, East Central Texas	38,500	38,850
Decrease		350

Southwest Texas

Luling	16,450	16,600
Lytton Springs	2,100	2,150
Somerset	1,200	1,200
Laredo District	14,000	14,050
Piedras Pintas	50	50
Others	600	600
Total, Southwest Texas	34,400	34,650
Decrease		250
Total, Texas—(Outside Gulf Coast)	494,200	491,500

GULF COAST

Coastal Texas

West Columbia	9,950	10,000
Damon Mound	950	950
Big Creek	4,150	4,300
Increase		2,700
Boling	2,050	2,050
Blue Ridge	2,500	2,550
Pierce Junction	8,850	9,000
Humble	3,600	3,700
Goose Creek	8,550	8,750
South Liberty	3,100	3,250
Hull	17,550	17,900
Saratoga	1,000	1,100
Batson	1,500	1,500

(*Continued on Page* 40)

CRUDE OUTPUT AT PEAK

Daily average crude production in this country reached the highest point on record during the week ended June 4, when output averaged 2,507,000 barrels daily. This is an increase of 9,000 barrels over daily average for week ended May 28, and an increase of 2,400 barrels over the previous high record reached the week ended May 7, 1927.

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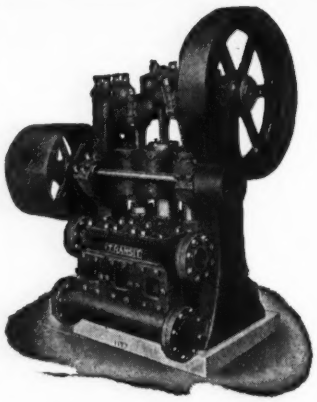

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Crude Production

(*Continued from Page* 38)

	June 4	May 28
Sour Lake	4,400	4,550
Spindleton	57,900	58,000
Orange County	5,500	5,100
Others	4,550	4,850
Total, Coastal Texas	136,100	137,550
Decrease		1,450

Coastal Louisiana

	June 4	May 28
Vinton	5,250	5,350
Lockport	6,000	6,050
Evangeline	1,000	1,050
Edgerly	700	700
Others	1,550	1,850
Total, Coastal Louisiana	14,500	15,000
Decrease		500
Total, Gulf Coast	150,600	152,550
Decrease		1,950

ROCKY MOUNTAIN

Wyoming

	June 4	May 28
Salt Creek	45,600	42,950
Grass Creek	2,550	2,400
Elk Basin	850	1,050
Big Muddy	2,750	2,850
Lost Soldier	1,800	3,050
Rock River	2,800	2,700
Lance Creek	500	550
Teapot Dome	1,300	950
Others	3,800	3,750
Total, Wyoming	61,950	60,250
Increase		1,700

Montana

	June 4	May 28
Cat Creek	2,300	2,300
Sunburst	11,200	11,200
Others	200	200
Total Montana	13,700	13,700

Colorado

	June 4	May 28
Moffat (Craig)	1,750	2,000
Fort Collins	2,900	7,050
Florence	900	900
Others	1,600	1,600
Total, Colorado	7,150	11,550
Decrease		4,400

New Mexico

	June 4	May 28
Table Mesa	600	250
Artesia	750	*600
Hogback	1,700	*1,700
Rattlesnake	500	1,400
Total, New Mexico	3,550	3,950
Decrease		400
Total, Rocky Mountain	86,350	89,450
Decrease		3,100

*Revised

California

	June 4	May 28
Santa Fe Springs	41,000	41,000
Long Beach	96,000	94,000
Huntington Beach	76,000	76,000
Torrance	23,500	24,000
Dominguez	17,500	17,500
Rosecrans	10,500	10,500
Inglewood	36,000	36,000
Midway - Sunset	91,000	91,000
Ventura Avenue	37,700	38,800
Seal Beach	54,000	44,000
Others	153,200	153,200
Total, California	636,400	626,000
Increase		10,400

Eastern

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.	114,000	115,500
Decrease		1,500

Kanotex Completes Line to Oxford

KANSAS CITY, MO.—The Crude Transit Co., of Arkansas City, Kans., a subsidiary of the Kanotex Refining Co., here, is completing a four-inch line to the Oxford field. The pipe line is 21 miles long and will serve both Oxford and Rainbow Bend fields. It was expected to be in operation May 28. Crude from these fields has heretofore been shipped to the Kanotex refinery at Arkansas City by

Bowlegs Takes Lead In Seminole Area Okla. Output Reaches New Peak

By A. F. Hinton

N. P. N. STAFF WRITER

TULSA, June 4.

BY INCREASING 4,230 barrels in daily average the past week, Oklahoma production is now once again higher than ever before in its history, having mounted to 751,070 barrels, according to National Petroleum News estimate. Records are set up only to be knocked down, and, as far as Oklahoma crude output is concerned, there is scarcely time to get one record in the books before another comes along to replace it.

Coincidentally with Oklahoma's rise to new heights, the Seminole district also outdid itself during the week, passing the previous peak that had held since May 10 and then continuing to increase the following two days. At present, the area is making 373,182 barrels, from 488 wells. Yesterday it was 367,809 barrels, as compared with 365,626 barrels Thursday. Up till then, its best day was 363,350 barrels, May 10. This is the 13th consecutive week in which the Seminole district has held its production above 300,000 barrels daily, and for three weeks it has been above 355,000 barrels. This may not be a record, but it will do to put down in the archives.

Bowlegs is now leading the four pools making up the Seminole district, and Seminole, discovery field of the Wilcox sand, has at last been relegated to second place. Youth must be served, and Bowlegs is young and full of pep, while Seminole is proceeding with faltering steps down the steep path to oblivion. For the last 24 hours Bowlegs made 146,856 barrels from 94 wells, while Seminole, with 290 wells, could put out only 124,687 barrels. This is the third day on which Bowlegs production has been the greater of the two.

It is interesting to compare the two fields at similar stages in their development. When Seminole had only 94 wells producing, it was making 118,000 barrels, as against 146,856 at Bowlegs from the same number of wells. When Seminole got its production up as high as Bowlegs is now, it had 133 wells. Seminole required 29 weeks to reach that production, while Bowlegs made it in 23 weeks.

On the other hand, Seminole undoubtedly was the more energetic of the two in the period immediately following discovery of the Wilcox sand. From completion of the discovery well, it required only 17 weeks for the field to get 100,000 barrels daily, and it had only 35 wells when this point was reached. Bowlegs got to 100,000 barrels in 20 weeks, but required 61 wells to get it that high. Since getting there, Bowlegs has added 33 wells and 47,000 barrels of production. At Seminole, the 33 wells completed after the 100,000-barrel mark was reached, brought production up to only about 103,000 barrels.

Although Seminole is still the center of news and interest in Oklahoma, it is refreshing to announce that the biggest well drilled in the state during the week was not in the Seminole district, and was not even in the Wilcox sand. This novel news concerns the No. 1 Lucinda Jones of Skelly Oil Co., in the SEc SW NW of 32-17-10, Creek county, southwest of Kelleyville. The well is in the Dutcher sand from 2678 to 2685 feet, and flowed as high as 5,008 barrels in 24 hours against a 190-pound back pressure.

Skelly Oil Co. has a block of 780 acres with this big well in the center. The best well heretofore drilled on the block was the Mussellem No. 2, direct south offset to the new well, which came in last March, for 245 barrels initial production, also in the Dutcher sand. The Jones well was drilled to comply with lease offset requirements. The company expected about a 150-barrel well.

When the well came in making 5,000 barrels, they had to do some lively stepping around to get it connected up to something that would hold the oil. At present it is flowing direct into a 55,000 barrel tank through a 4-inch line about three-eighths of a mile long and is making better than 4,000 barrels with a 4-inch valve in the line half-closed. Officials of the company estimate the well would make 7,500 to 8,000 barrels if allowed to flow wide open. Skelly No. 2 Yellowhead, southeast diagonal offset to the big well, is now spudding in.

The Texas Co., which has only one small well on the north edge of old Seminole, and which has been absent from all the big doings down that way for the past few months, joined the ranks of Bowlegs producers during the past week, and now has two wells on its Reed farm in 14-8-6, making 6,795 barrels daily. The company has a 160-acre lease

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended June 4, 1927.

	June 4 — Week Ended —					May 28				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	..	6	18	6	30	..	7	19	6	32
Other Osages	10	4	24	5	43	12	4	32	4	52
Bristow-Cushing	5	4	60	10	79	4	6	64	12	86
North Oklahoma	5	8	71	37	121	3	6	78	37	124
South Oklahoma	11	14	156	40	221	11	11	170	35	227
Muskogee	..	7	25	15	47	..	7	22	20	49
Okmulgee-Bristow	6	44	80	21	151	6	48	79	25	158
Tonkawa	3	1	2	1	7	..	1	3	..	4
Seminole Dist.	32	41	551	49	673	39	56	547	38	680
Total Oklahoma	72	129	987	184	1,372	75	146	1,014	177	1,412
KANSAS	37	58	128	77	300	34	55	137	76	302
TEXAS										
Central	..	138	221	176	535	..	108	245	194	547
East	..	0	8	11	19	..	..	11	12	23
Panhandle	..	104	194	109	407	..	97	220	95	412
N. Central	..	51	101	29	181	..	50	103	31	184
West	..	97	158	62	317	..	91	154	58	303
Laredo	..	1	34	17	52	..	1	38	13	52
Total Texas	..	391	716	404	1,511	..	347	771	403	1,521
GRAND TOTAL	109	578	1,831	665	3,183	109	548	1,922	656	3,235

Summary of Seminole District Production as of June 3, 1927, by Companies having 10,000 barrels or more daily production.

	Bowlegs		Earlsboro		Searight		Seminole		Total	
COMPANY	Wells	Prod.	Wells	Prod.	Wells	Prod.	Wells	Prod.	Wells	Prod
Amerada	8	11,590	4	11,651	0	0	12	4,663	24	27,904
Barnsdall	2	731	2	5,882	0	0	12	8,288	16	14,901
Carter	10	21,580	0	0	12	16,620	50	36,652	72	74,852
Gypsy	6	5,342	10	11,365	1	682	24	7,020	41	24,408
I. T. I. O.	24	46,168	0	0	0	0	26	7,312	50	53,480
Magnolia	0	0	5	18,636	0	0	2	1,752	7	20,388
Mid-Cont.	3	3,036	2	3,980	7	7,050	16	2,910	27	16,976
Prairie	6	8,070	1	260	12	6,635	14	4,353	33	19,318
Pure	7	11,906	0	0	1	860	20	10,682	28	23,448
Sinclair	10	9,270	1	0	2	1,125	16	4,185	29	14,580
Tidal	1	1,908	0	0	0	0	26	8,245	27	10,153

Seminole District Production by Companies and Leases, June 3 and May 27, 1927

Company	Farm	S.T.R.	June 3 No. Wells	June 3 Prod.	May 27 No. Wells	May 27 Prod.
BOWLEGS						
Amerada	Rascoe	15– 8–6	8	11,590	7	12,165
Atlantic	Fleet	23– 8–6	1	4,008	0	0
Atlantic	Jones	16– 8–6	2	1,015	2	1,200
Atlantic	Taylor	10– 8–6	2	3,310	1	1,495
Total Atlantic			5	8,333	3	2,695
Barnsdall	McNac	28– 8–6	1	60	0	0
Barnsdall	Murrow	11– 8–6	1	671	0	0
Total Barnsdall			2	731		
Carter	Harjoche	14– 8–6	4	5,195	2	2,100
Carter	Walker	15– 8–6	1	3,695	1	70
Carter	Wise	23– 8–6	4	9,455	4	11,955
Total Carter			10	21,580	8	17,125
Empire	La cey	14– 8–6	4	5,736	3	7,529
Gypsy	Brown	33– 8–6	1	80	1	130
Gypsy	Walker	15– 8–6	5	5,262	5	7,522
Total Gypsy			6	5,342	6	7,652
I. T. I. O.	Davis	13– 8–6	2	3,895	2	4,266
I. T. I. O.	Goforth	15– 8–6	6	11,573	4	8,473
I. T. I. O.	Livingston	15– 8–6	7	16,203	7	13,258
I. T. I. O.	Walker	15– 8–6	4	7,814	4	8,387
I. T. I. O.	Wilmont	15– 8–6	3	2,480	2	255
I. T. I. O.	Youngblood	24– 8–6	2	4,003	2	4,336
Total I. T. I. O.			24	46,168	21	30,558
McCulloch	Bowlegs	22– 8–6	1	265	0	0
Mid-Continent	Baker	10– 8–6	2	1,976	2	2,291
Mid-Continent	Hutke	24– 8–6	1	1,050	1	1,800
Total Mid-Continent			3	3,036	3	4,091
Minnehoma	Bowlegs	15– 8–6	1	716	1	862
Prairie	Gahagan	23– 8–6	1	3,300	1	3,005
Prairie	Harber	10– 8–6	3	4,445	2	5,295
Prairie	Whitney	23– 8–6	2	325	1	135
Total Prairie			6	8,070	4	8,435
Pure	Reed	14– 8–6	7	11,906	7	12,602
Roxana	Taylor	16– 8–6	4	1,275	3	280
Sinclair	Adam	22– 8–6	1	40	1	0
Sinclair	Bowlegs	22– 8–6	1	400	1	315
Sinclair	Ellen	11– 8–6	1	610	1	535
Sinclair	Harjo	14– 8–6	3	4,035	3	5,810
Sinclair	Jones	8– 8–6	1	850	1	3,120
Sinclair	Taylor	10– 8–6	1	675	1	610
Sinclair	Walker	22– 8–6	2	2,660	1	2,510
Total Sinclair			10	9,270	9	13,900
Texas	Reed	14– 8–6	2	6,795	1	230
Tidal	Harjoche		1	1,908	0	0
Total Bowlegs			94	142,521	79	125,511
Earlsboro						
Amerada	Anderson	15– 8–5	3	7,044	3	6,793
Amerada	Cowden	4– 9–5	1	4,607	1	5,816
Total Amerada			4	11,651	4	13,789
Barnsdall	Savolka	15– 9–5	1	5,362	1	5,183
Barnsdall	Smith	15– 9–5	1	520	1	820
Total Barnsdall			2	5,882	2	6,003
Crosbie	Bryant	9– 9–5	1	4,409	1	3,905
Gypsy	Bora	16– 9–5	1	0	1	0
Gypsy	Earl	16– 9–5	1	0	1	62
Gypsy	McFarland	9– 9–5	2	1,500	2	1,930
Gypsy	Peter	10– 9–5	2	3,195	2	4 407
Gypsy	State	16– 9–5	4	6,669	4	8,182
Total Gypsy			10	11,364	10	14,581
Independent	Knappen	8– 9–5	1	3,074	1	1,837
Magnolia	Bryant	9– 9–5	2	6,955	2	6,887
Magnolia	Homsley	11– 9–5	1	6,741	1	6,837
Magnolia	Sparks	11– 9–5	2	4,940	1	510
Total Magnolia			5	18,636	4	14,234
Mid-Continent	McCumber	9– 9–5	2	3,890	2	4,565
Phillips	Graham	9– 9–5	3	1,785	2	1,498
Philmack	Dobbs	9– 8–5	2	1,339	1	937
Prairie	Baker	24– 9–5	1	260	1	325
Sinclair	Foreman	18– 9–5	1	0	1	0
Shallow Sand			30	4,320	31	4,450
Total Earlsboro			63	65,700	61	65,124
SEMINOLE PROPER						
Amerada	Fixico	23– 9–6	4	1,965	4	2,025
Amerada	Killing	23– 9–6	4	536	4	598
Amerada	Rentie	23– 9–6	4	1,561	4	1,562
Total Amerada			12	4,663	12	4,185
Atlantic	N. Cudjo	26– 9–6	4	400	4	760
Atlantic	J. Cudjo	36– 9–6	2	30	2	0
Total Atlantic			6	430	6	760
Barnsdall	Carter	24– 9–6	9	5,538	9	4,312
Barnsdall	Jones	34– 9–6	3	2,750	3	2,992
Total Barnsdall			12	8,288	12	7,307
Carter	B. Carter	24– 9–6	2	215	2	215
Carter	J. Carter	24– 9–6	4	115	4	120
Carter	F. Carter	24– 9–6	3	635	3	600
Carter	R. Cudjo	35– 9–6	3	1,320	3	1,085
Carter	W. Cudjo	34– 9–6	1	540	1	590
Carter	Gilliland	27– 9–6	1	590	1	705
Carter	Grisso	23– 9–6	8	1,820	8	2,550
Carter	Knapp	13– 9–6	3	1,490	3	1,545
Carter	Killing	34– 9–6	12	18,377	11	20,117
Carter	Lukes	27– 9–6	5	3,770	5	2,505
Carter	Simpson	35– 9–6	2	640	2	725
Carter	Strother	34– 9–6	2	5,595	2	6,000
Carter	Vierson	23– 9–6	4	1,545	4	1,660
Total Carter			50	36,652	49	38,417
Empire	Gross	25– 9–6	2	797	1	150
Empire	Wilson	34– 9–6	3	1,646	3	1,998
Total Empire			5	2,443	4	2,148
Gypsy	Butler	35– 9–6	3	1,241	2	1,127
Gypsy	Carter	24– 9–6	8	2,537	8	2,147
Gypsy	Fixico	26– 9–6	5	245	5	220
Gypsy	Harjo	25– 9–6	2	1,077	2	1,010
Gypsy	Wolf	26– 9–6	6	1,910	6	2,405
Total Gypsy			24	7,020	23	6,909
Independent	T. Fixico	26– 9–6	8	1,624	8	1,456
Independent	P. Fixico	23– 9–6	4	345	4	190
Independent	Harjo	25– 9–6	1	0	1	0
Independent	Jones	26– 9–6	4	690	4	792
Total Independent			17	2,659	17	2,338
I. T. I. O.	Bowlegs	26– 9–6	10	4,478	10	4,519
I. T. I. O.	Goodin	23– 9–6	4	876	4	899
I. T. I. O.	Harjo	24– 9–6	4	898	4	671
I. T. I. O.	James	24– 9–6	4	1,060	4	1,242
I. T. I. O.	Marcy	13– 9–6	1	0	1	10
I. T. I. O.	Reed	24– 9–6	3	0	3	31
Total I. T. I. O.			26	7,312	26	7,372
Kingwood	Johnson	22– 9–6	5	2,856	5	2,569
Magnolia	Franks	25– 9–6	2	1,752	2	1,664
Mid-Cont.	Rentie	14– 9–6	9	2,215	9	2,200
Mid-Cont.	Tayeche	24– 9–6	7	695	7	620
Total Mid-Continent			16	2,910	16	2,820
Mid-Kansas	Johnson	25– 9–6	1	785	1	780
Mid-Kansas	Pressley	3– 9–6	1	25	1	0
Total Mid-Kans.			2	810		
Philmack	Butler	35– 9–6	2	1,385	1	1,615
Phillips	Strother	27– 9–6	3	1,262	3	197
Prairie	Gross	25– 9–6	5	30	5	95
Prairie	Mason	13– 9–6	1	1,448	1	1,405
Prairie	Spencer	13– 9–6	1	0	1	20
Prairie	Strother	27– 9–6	7	2,875	7	3,740
Total Prairie			14	4,353	14	5,260
Pure	Strother	26– 9–6	17	5,028	17	5,637
Pure	B. Strother	36– 9–6	3	5,654	2	2,537
Total Pure			20	10,682	19	8,174
Roxana	Harber	22– 9–6	2	727	2	900
Roxana	Lashley	22– 9–6	2	298	2	330
Total Roxana			4	1,025	4	1,230
Sinclair	Carter	13– 9–6	2	40	2	40
Sinclair	Cudjo-A	35– 9–6	6	1,280	6	1,530
Sinclair	Cudjo-B	35– 9–6	3	960	3	1,520
Sinclair	Dicey	22– 9–6	1	790	1	855
Sinclair	Fixico	23– 9–6	4	1,115	4	1,320
Total Sinclair			16	4,185	16	5,326
Slick	Born	35– 9–6	1	0	0	0
Slick	Cudjo	35– 9–6	3	1,500	3	1,596
Slick	Franks	35– 9–6	8	2,417	8	2,706
Slick	Giblet	35– 9–6	1	1,561	1	2,062
Total Slick			13	5,478	12	6,364
Superior	Cudjo	35– 9–6	4	2,243	4	3,043
Texas	Mayhue	14– 9–6	1	25	1	200
Tidal	Carter	24– 9–6	5	2,595	5	2,710
Tidal	Fixico	26– 9–6	7	1,670	7	1,915
Tidal	Harjo	23– 9–6	7	125	7	300
Tidal	Mahardy	24– 9–6	5	1,125	5	1,120
Tidal	Tayeche	25– 9–7	2	2,730	2	3,130
Total Tidal			26	8,245	26	9,170
Turman	Cudjo	35– 9–6	4	1,443	4	1,903
Turman	Grisso	35– 9–6	1	597	1	678
Turman	Jones	34– 9–6	4	5,240	4	7,088
Total Turman			9	7,280	9	9,769
TOTAL SEMINOLE PROPER			290	123,347	285	127,621
Searight						
Carter	Davis	4– 9–6	5	7,460	5	8,010
Carter	Frazier	3– 9–6	4	9,085	4	10,280
Carter	Kiker	29 –9–6	1	35	1	50
Carter	Scott	26–10–6	1	40	1	40
Carter	Stewart	34– 9–6	1	0	1	0
Total Carter			12	16,620	12	19,280
Gypsy	Cudjo	4– 9–6	1	682	1	815
Mid-Cont.	Grayson	33–10–6	5	7,015	5	2,325
Mid-Cont.	Saloche	33–10–6	1	35	1	50
Total Mid-Continent			6	7,050	6	2,375
Prairie	Cannon	33–10–6	1	20	1	25
Prairie	Carter	10– 9–6	1	20	1	25
Prairie	Houck	30–10–6	1	15	1	15
Prairie	Kinkade	33–10–6	8	6,580	8	6,105
Prairie	Wiemer	22–10–6	1	0	1	70
Total Prairie			12	6,635	12	6,240
Pure	Aldridge	3– 9–6	1	860	1	1,010
Roxana	Strother	3– 9–6	1	296	1	359
Searight	Youngblood	33–10–6	2	0	2	0
Sinclair	Polly	3– 9–6	2	1,125	2	1,445
Twin State	Cudjo	4– 9–6	1	865	1	1,175
Wilcox	Chupco	4– 9–6	2	2,108	2	3,865
TOTAL SEARIGHT			40	36,241	40	40,662
GRAND TOTAL SEMINOLE DISTRICT			487	367,809	465	358,918

	Wells	Production	Average Per Well
Hunton Lime	55	8,300	150.9
Shallow Sand	31	4,340	140.0
Wilcox Sand	401	355,249	885.8
	487	367,809	755.3

Completions in Oklahoma and Kansas, Week ended June 4th, 1927

Company	Well No.	Location	Depth	Initial Prod.
		OKLAHOMA		
		Carter County		
Mangolia	1	NWc NE SE 21-2-3 W	2150-2156	92
Magnolia	1	SEc 32-1-3 W	T.D. 3700	Dry
		Comanche County		
Mid-Kans	1	NEc SE NE 30-1-13 W	T.D. 1920	Dry
		Creek County		
Silurian	24	SWc SE NE 17-18-7	2384-2421	150
Producer	2	SEc NE SE 36-17-8	2730-2771	75
Roxana	3	SEc SW NE 18-19-9	2941-2949	449
Thompson et al	2	SEc NW 12-17-10	2412-2428	30
Missner et al	11	SWc NE NE SE 17-17-11	1898-1940	7M
Tibbens	2	SEc SW SW 20-15-9	2720-2731	6M
Nowata et al	3	CWL NE NW 8-17-10	3030-3064	125
Wilson	1	SEc SW SE 23-18-10 E	T.D. 3214	Dry
McLean et al	1	NEc SE SE 2-18-11	T.D. 2435	Dry
Smith et al	2	NEc NW SW 3-17-11	T.D. 2368	Dry
Wood	1	NWc NE NW 13-17-11	T.D. 2752	Dry
		Garfield County		
Sinclair	72	NWc SE NW NE 13-22-4 W	3703-3707	25
		Garvin County		
Magnolia	4	SEc NW SW SW 14-1-3 W	T.D. 1954	Dry
		Grady County		
Hall-Briscoe	3	SWc NE SE 35-5-8 W	2182-2380	22M
Gypsy	5	SWc NR SW 16-3-5 W	1723-1733	150
Amerada et al	4	NEc NW NE 21-3-5 W	1595-1730	550
Carter	1	NWc SE SE 21-3-5 W	2318-2323	68
Magnolia	1	NWc SW SW 21-3-5	T.D. 3416	Dry
		Grady County		
Mangolia	1	NWc NE NW 28-3-5 W	T.D. 3605	Dry
McBride	1	NEc SW 34-3-5 W	T.D. 1850	Dry
		Hughes County		
Amerada	2	SWc NW NW 6-9-10 E	3745-3746	297
Minnehoma	6	SEc NE NE 1-9-9 E	3781-4062	50
		Kay County		
Blackwell	11	C N½ SE 18-28-1 E	3245-3297	144
Marland	3	NEc SW 1-26-2 W	3585-3630	266
Blackwell	1	C SWSE 31-27-1 W	T.D. 887	Dry
		Lincoln County		
I. T. I. O.	1	NEc NW NE 6-16-5 E	4260-4280	50
Wilcox	1	NEc NW NW NW 16-15-5	T.D. 4468	Dry
		McIntosh County		
Aggas et al	1	CWL NW NW 11-12-15 E	T.D. 1312	Dry
		Muskogee County		
Williams et al	1	SEc NE NW 17-15-17 E	910-1421	20M
Whaley et al	1	SEc NW SE 8-15-17	T.D. 1495	Dry
Foltz	1	SEc 20-15-17	T.D. 2000	Dry
		Okmulgee County		
Boone	4	SEc NE 18-14-15	T.D. 2810	Dry
Gallagher	3	NEc NW 18-14-15	T.D. 2300	Dry
Strozier et al	1	SEc SW NE 29-15-12	T.D. 2753	Dry
Roberts	2	NEc SE 10-15-14	T.D. 2026	Dry
Atlas	3	CNL NE NW 21-16-14	2210-2230	10
Simms	20	CWL NE SW 15-13-14	1900-1925	15
		Osage County		
Winona	1	NWc SW 15-28-10	1830-1897	5
Phillips	5	NWc SW SE 1-27-5	2945-3004	65
Porters	7	SEc NE NW NW 17-27-6	2945-3000	768
Skelly	2	SWc SE SW 27-27-6	2906-2969	528
Skelly	3	SEc SW SW 27-27-6	2882-2959	1420
		Osage County		
Skelly	4	SWc 27-27-6	2876-2942	920
Skelly	5	NWc SW SW 27-27-6	2895-2967	1275
Phillips	8	NEc SE NE 29-26-6	2913-2975	125
Marland	1	SWc SE SE 27-25-9	2072-2137	25
Tidal Osage	3	NEc SW 20-24-9	2123-2187	50
Osage	38	SEc SW NW NE 9-24-12	1575-1619	5
Superior	4	NEc NW 20-23-10	2478-2509	15
Prairie	2	SEc NE NE 17-27-6	T.D. 3207	Dry
Gypsy	1	SEc NW 17-23-10	T.D. 2655	Dry
Sitron	1	SEc NW 5-22-10	T.D. 2125	Dry
Phillips	7	NWc SE 10-21-9	T.D. 3020	Dry
		Pawnee County		
Ark. Fuel	1	CSL NW 5-21-7 E	T.D. 3286	Dry
Magnolia	1	SEc SW NW 9-20-6	T.D. 3250	Dry
Magnolia	1	SWc SE NW 9-20-6	T.D. 3427	Dry
Industrial	1	SWc SE 13-20-9	T.D. 2885	Dry
Magnolia	1	NEc SE 10-22-3 E	T.D. 3957	Dry
Gypsy	5	NWc SW SW 33-20-5 E	2835-2854	90
		Payne County		
Magnolia	3	NEc SE SW 8-19-5 E	3024-3033	80
		Pittsburgh County		
San Bois	1	SWc NW 11-7-18 E	1871-1911	8M
		Pontotoc County		
LaSalle et al	1	C N½ 31-5-5 E	2522-2700	136
		Pottawatomie County—Seminole		
Magnolia	1	SEc NW 9-9-5 E	4294-4301	3613
Phillips	4	SWc NW SE 9-9-5	4305-4315	1355
Gypsy	2	NWc NE 16-9-5	4246-4336	542
		Seminole County		
Wilcox	2	SEc NW NE 4-9-6	4336-4398	2060
Phillips	4	SEc NW SE 27-9-6	3997-4018	1280
Pure	1	NWc 36-9-6	4185-4194	1655
Indep	2	SWc NE 7-9-8	3298-3308	50
Oklavania et al	2	SEc NW SE 18-9-8	3244-3270	35
Empire	4	NEc SW SW 14-8-6	4063-4088	3250
Texas	2	SWc NE 14-8-6	4118-4238	1952
Gypsy	4	SEc NW SE 15-8-6	4183-4205	3295
Gypsy	6	SEc NE SW 15-8-6	4030-4141	5203
I. T. I. O.	6	NWc SE NW 15-8-6	3932-3980	5203
I. T. I. O.	4	SWc SE SE 15-8-6	4121-4154	2157
Atlantic	3	SEc NE SE 16-8-6	4130-4286	1380
Carter	1	NEc SE 23-8-6	T.D. 4035	11M
Carter	2	NWc NE NE 23-8-6	4252-4258	6665
Carter	3	SEc NE NE 23-8-6	4300-4306	3310
I. T. I. O.	1	NWc SW SE 15-8-8	3296-T.D.	195
Gypsy	3	NWc SW SW 10-9-5	4347-4354	1995
Texas	3	SEc NE SE 10-9-5	3575-3588	115
Magnolia	4	NWc SW SW 11-9-5	4306-4310	565
I. T. I. O.	3	NWc SE NW 15-8-6	4134-4144	2781
McMahon et al	1	SEc NW SW 15-8-8	T.D. 3304	Dry
		Stephens County		
Gilmer et al	2	NEc SE SE 24-1-4 W	2537-2995	1200
		Tulsa County		
Superior	2	C NE NE 16-19-10	T.D. 2055	Dry
		Wagoner County		
Webb et al	4	NWc 9-18-16 E	T.D. 740	Dry
		KANSAS		
		Bulter County		
Empire	1	SWc NE 34-27-5 E	2695-2723	230
Blue Stem	4	NWc SE SW 5-27-6 E	2700-2716	50
Patton et al	2	SW SE SE 33-27-6 E	3090-3096	200
Powell et al	1	NEc SW 25-24-7 E	T.D. 2743	Dry
Dixie Oil et al	1	NEc SE SE 1-28-5 E	T.D. 3172	Dry
Mid-Kansas	6	SEc SW 3-28-6 E	T.D. 3089	Dry
		Chase County		
White Eagle	1	C NE NE 31-18-7 E	1141-1148	2M
		Cowley County		
Forrester et al	1	NEc NW 4-33-7 E	2760-2719	40
Gypsy	1	MWc SW 4-34-3 E	T.D. 3986	Dry
		Greenwood County		
Parrish et al	1	NWc NE SW 5-24-12 E	1790-1860	10
Cross et al	1	NEc SE 36-24-12 E	1596-1611	25
Prairie	1	SWc NW 25-24-12 E	T.D. 1738	Dry
Aikman et al	1	SWc NE NE 22-22-13 E	T.D. 1903	Dry
Sharpless et al	1	NWc 7-24-12 E	T.D. 1828	Dry
		Lyon County		
Culp et al	1	SWc SE 25-19-10 E	T.D. 2163	Dry
Leonard	1	SWc NE 30-21-12 E	T.D. 1958	Dry
		Marion County		
Hartman et al	1	NEc NW SW 28-20-4 E	T.D. 2578	Dry
		Woodson County		
Prairie	1	NEc SW 9-25-14 E	T.D. 1525	1½M

on the entire NE¼ of this section.

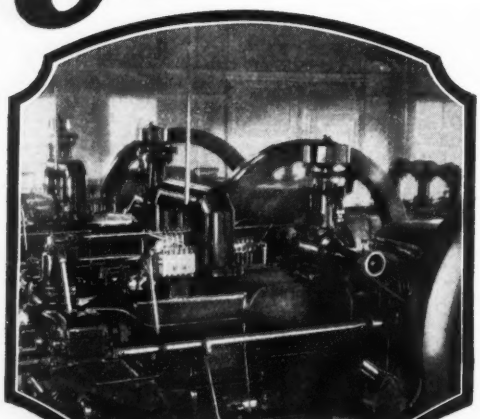
The Texas Co. No. 1 Reed, in the SEc NE of 14-8-6, was one of the factors that helped Bowlegs reach a new high in production in the past few days. This well is 4246 feet deep, and produced 3,685 barrels in the past 24 hours. It topped the sand at 4221 feet and started off flowing 177 barrels an hour. The same company's No. 2, in the SWc NE of the same section, a half-mile west of No. 1, is making 3,000 barrels on air-lift.

The best well in the Earlsboro field during the week was Magnolia Petroleum Co. No. 4 Sparks, in the NWc SW SW of 11-9-5. This well made 565 barrels a day when first drilled into the Wilcox sand. When deepened two and a half feet to 4313 feet, it made 2,541 barrels the first nine hours, and 4,400 barrels in 24 hours. The Magnolia now has five wells at Earlsboro making 18,636 barrels daily, or more than 3,700 barrels per well.

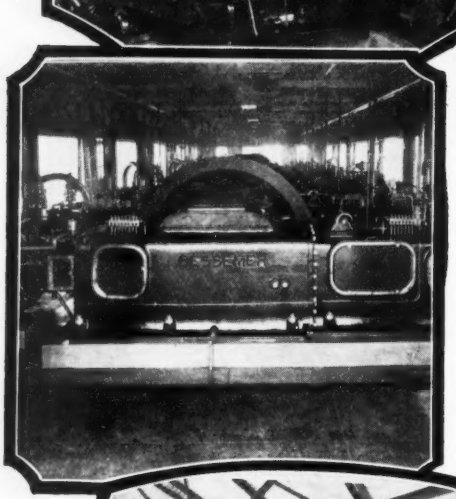
Atlantic Oil Producing Co., which also had only small production at Seminole, is coming into its own at Bowlegs, and now has five wells making 8,333 barrels daily. It drilled in one of the best wells of the week in its No. 1 Fleet, in the NEc NW of 23-8-6. This well made 4,008 barrels in the last 24 hours, in the Wilcox sand from 4239 to 4257 feet. The company may be said to be in the Navy now, as it owns the Atlantic-Fleet.

Another reason why Bowlegs made such rapid strides recently is the Indian Territory Illuminating Oil Co. No. 10 Goforth, in the SWc NW NE of 15-8-6. This well made 4,213 barrels when drilled into the so-called "second Wilcox" at total depth of 4293 feet. This company's No. 3 Waller, in the SWc NE NE of 15-8-6, came in for 2,120 barrels in the Wilcox at 4236 feet total depth.

For *Gasoline Plants, Booster Stations and for Flowing Wells*



Direct driven Bessemer Compressors in an Oklahoma Natural Gas Co. booster station.



An installation of 200 H. P. Bessemer Four-Cycle Compressor in the Rosecrans plant of the Industrial Fuel Supply Company

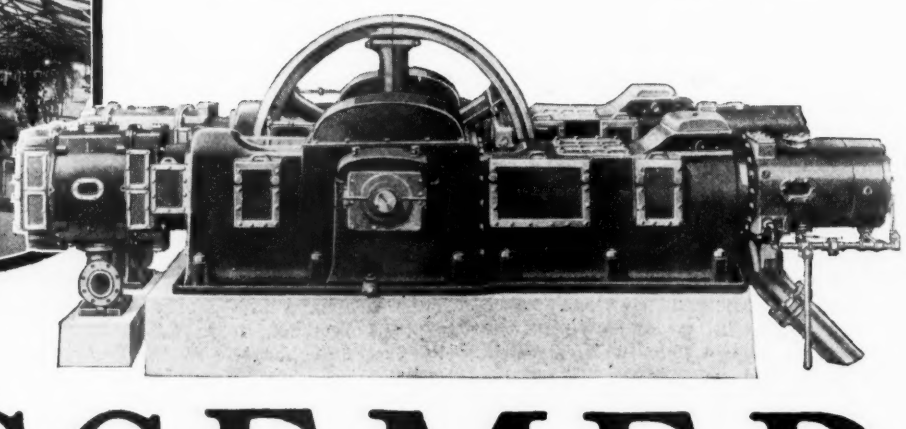
Bessemer Type Ten Compressors in the Strothers blowing plant of the Pure Oil Co.

NO MATTER what service you may have for a compressor, you must have compression efficiency, high average running time and low maintenance and operating cost to make your compressor investment a profitable one.

The reason there are so many Bessemer Compressors in service today is simply because Bessemers have proved their greater value by actual performance in all types of service, under all field operating conditions.

The Bessemer average of 99%+ running time is consistently maintained in gasoline plants, booster stations and for flowing wells. Their maintenance cost is invariably lower, their life of service longer and their depreciation less. Any Bessemer compressor user will tell you convincingly why Bessemers are better. Ask one.

THE BESSEMER GAS ENGINE COMPANY
70 York Street :: :: Grove City, Pa.



BESSEMER

TWO-CYCLE AND FOUR-CYCLE COMPRESSORS

Texas Completions, Week Ended June 4th, 1927

NORTH-EAST-CENTRAL DISTRICT

Brown County

Company	Well Farm	Location Survey	Depth	Initial Prod.
Humble	14-Hickman	Benson	1227-1237	12
Currey et al	5-Pickett	Logan	1269-1285	15
Ramsey	3-Henson	Logan	1258-1263	30
Forrest	3-Smith	SA & MG	1325-1335	20
Hughes	5-Shore	Ryan	1294-1398	1500
Hughes	22-Shore	Ryan	1292-1315	1500
Hughes	24-Shore	Ryan	1289-1314	800
Hughes	25-Shore	Ryan	1289-1313	800
Root et al	4-Pugh	Pugh	1302-1307	15
Sinclair	51-Shore	Ryan	1278-1281	100
Sinclair	52-Shore	Ryan	1256-1274	836
Sinclair	53-Lowe	Stubblefield	1271-1296	700
Texas	3-Byler	T & NO	1280-1285	15
Shoup	16-Byoer	T & NO	T.D. 2533	Dry
Zoch et al	1-Wallace	Martin	T.D. 1501	Dry

Callahan County

Brown et al	2-Edwards	Comal	1640-1667	15
Valley	1-Ramsey	D & DA	440-443	12
Empire	1-Johnson	GH & S	4086-4145	9M
Thomspon et al	1-Scott	D & DA	T.D. 809	Dry
Dixie	1-Ross	BBB & S	T.D. 1504	Dry
Moore et al	1-Boydson	BBB & C	T.D. 1608	Dry
Cooke	1-McCamey	Collins	T.D. 1180	Dry
Mee et al	1-Harris	D & DA	T.D. 810	Dry
Payne	1-McDermott	Holms	T.D. 1906	Dry

Coleman County

Daugherty	1-Mulloney	T & NO	T.D. 400	Dry
Newby	1-Vance	ET	T.D. 807	Dry

Comanche County

Hickey	1-Mooney	H & TC	T.D. 1640	Dry
Mid-Kans	1-Woldrip	Demoss	2752-2754	5 5

Eastland County

Gulf	6-Duffer	Mathis	3415-3475	15
Simms	1-Dinvler	Sapp	2888-2973	3
Moody et al	1-Dyer	SP	3848-3883	38
Eastland	1-Carter	H & TC	T.D. 3960	Dry
Robert	1-Elliott	Robinson	T.D. 1784	Dry
Keys et al	1-Fee	H & TC	T.D. 2520	Dry
Dodson et al	1-Cade	Roberts	T.D. 1360	Dry

Fisher County

Zoch et al	1-Lanius	Clayton	T.D. 3802	Dry
Schermerhorn	1-Hash	Rogers	T.D. 2506	Dry

Henderson County

Cranfill et al	1-Purefay	Newell	T.D. 3043	Dry

Jones County

Whitehead et al	1-Bristow	Gibson	T.D. 589	Dry

Taylor County

Mid-West	1-Smith	GOBO	T.D. 3280	Dry
Sanger	1-Gillespie	LAL	T.D. 4725	Dry

North Texas

Maer et al	5-Wilson	DL & C	1535-1538	120
Graham	1-Edwards	Bruner	T.D. 1585	Dry
Maer et al	1-Wilson	SP	T.D. 1600	Dry
United Prod	1-Andrew	Glass	T.D. 1555	Dry
Alladay	1-Andrews	TE & L	T.D. 1020	Dry

Cooke County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Kewanee	1-Dennis	Hutchinson	1287-1295	475
Texas	2-Dennis	Hutchinson	1298-1304	500
Lynch-Stahl	1-Koelzer	Scott	1672-1677	262
Roxana	1-Walterschield	Littleton	1670-1675	240
Oil Opers	3-Kleiss	Littleton	1581-1605	200
Oil Opers	4-Luke	Muenster	1621-1641	250
Kewanee	1-Milburn	McClyman	T.D. 1534	Dry
Big Indian	1-Clerr	Ivy	T.D. 1900	Dry

Grayson County

Johnson et al	1-O'Dell	Shannon	T.D. 2005	Dry

Wichita County

Texas	326-Waggoner	H & TC	T.D. 2250	Dry
Wilson	2-Kemo	Roesch	T.D. 750	Dry

Wilbarger County

Gulf	3-Milner	H & TC	1169-1187	100
Humble	1-Waggoner	H & TC	T.D. 2165	Dry

Young County

Olney	2-Kemp	TE & L	T.D. 1150	Dry

PANHANDLE DISTRICT

Carson County

Empire	3-Magnolia	I & GN	3120-3152	714

Gray County

Travis et al	1-Beck	H & GN	2845-2850	800

Hutchinson County

Fuqua et al	2-Christian	Christian	T.D. 3025	Dry
Gulf	2-Hodges	T.C.	2870-2942	230
Phillips	1-Hodges	TC	2869-2985	50
Phillips	2-Johnson	Davis	2846-2897	25
Phillips	11-Whittenburg	Tomlinson	2815-2870	20
Phillips	5-Whittenburg	HETC	2859-2910	250
Pure Oil Co	5-Johnson	H & TC	2865-2931	414
Pure Oil Co	5-Lansing	D & SE	2728-2760	150
Pure Oil Co	12-Whittenburg	H & TC	2934-2876	200
Pure Oil Co	3-Kingsland	M & C	2931-2981	100
Julian	5-Johnson	A & B	2903-2955	210
Herogan et al	1-Cockrell	M & C	2905-3021	200

Moore County

Phillips	2-Sneed	Surplus Land	T.D. 3105	Dry

WEST TEXAS

Crane County

Church et al	1-Univ.	Univ.	2844-2981	362
Independent	2-Univ.	Univ.	2950-2960	150
Tisal	1-Univ.	Univ.	3052-3067	100

Crockett County

Magnolia	2-Shannon	EL & RR	T.D. 4100	Dry

Howard County

Lockhart et al	3-Chalk	W & NW	1532-1568	35
Comet et al	1-Clay	W & NW	1808-1838	40
Dixie	1-Clay	W & NW	1833-1863	20
Marland	4-Clay	W & NW	1772-1791	40
Marland	1-White et al	T & P	T.D. 3515	Dry

Pecos County

Mid Kansas et al	1-Yates	I & GN	1014-1110	4323
Henshaw	1-Yates	I & GN	T.D. 1550	Dry

Upton County

Independent	60-Taylor	Sapp	2057-2060	175
Bryant	2-Baker	Denton	2240-2325	30
Dixie	24-Burleson	Nidiver	1972-2030	100

Alamitos Heights Sand Found to Be Thicker

Staff Special

LOS ANGELES, June 4.—The discovery that the thickness of the oil sand in the Alamitos Heights area of the Seal Beach field is considerably greater than at first thought has caused many to change their production estimates. The production of the Seal Beach field the past week increased about 9,000 barrels, due to the completion of 13 new producers with a total flush production of about 19,000 barrels. It is now considered that the sharp decline that has been expected will be delayed two or three weeks.

Wells on the top of the structure at Alamitos Heights, probably some three or four blocks in extent, are penetrating between 150 and 200 feet of pay formation, against an average of about 70 feet in other portions of the Alamitos area. Wells formerly drilled only 70 to 75 feet into the sand are now drilling deeper, and while these wells are being completed, the Seal Beach production can be expected to hold up and probably show increases.

For instance, George Getty drilled his Alamitos No. 2 to completion April 30, with bottom of hole at 4684 feet, for a flush of 2200 barrels, but this production had declined to about 400 barrels in a little over two weeks. The hole was drilled deeper, (information on exact depth of new hole is refused) and on May 27 was again placed on production for about 3000 barrels and two days later was making close to 2900 barrels. It is generally reported that this redrilled hole is producing from between 150 and 200 feet of oil sand.

Mr. Getty has two other wells due in within the next week, both to be drilled about as deep as the present producer.

During the past 10 days several good wells have been completed in the older end of the Seal Beach field, and with the production from the deeper wells added to the settled production, the daily average of the field will hold up some two or three weeks longer than expected, but practically all of those closely watching the field feel that the decline will be just as heavy as expected, but simply delayed for the period mentioned.

Reports have gone out over the United States that the deeper Alamitos Heights wells have found a deeper sand. This is not true. It is only a deeper penetration of the sand already being produced.

LONG BEACH during the past week also showed an increase on account of two new wells drilled deeper into the formation, which are holding up well. Long Beach can be expected to about hold its own for the next several weeks. Huntington Beach is also holding up well, as new wells are being completed about fast enough to offset the normal decline.

"Pool Hall Sheiks" Lay Oil Line In Record Breaking Time

Staff Special, TULSA, June 6—HIGH school youths of the modern type who can and will work. That includes the type variously known as "pool hall sheiks" was demonstrated recently in an emergency resulting from the bringing in of a wildcat well near Yale by the Twin State Oil Co. and others.

A two-inch line had been provided to handle production from the well to the Sun Oil Co. refinery at Yale, a distance of about 10 miles. When the well began to increase in production suddenly it was found necessary to provide additional line capacity and tankage to save the oil. The need for the new line became apparent one Sunday and on Thursday a pump station had been erected and put in operation, 10 miles of four-inch pipe laid with all joints pounded and oil was being pumped. This with the aid of inexperienced high school boys.

The job of assembling enough material for the line in such a short period and getting it into the field was quite an achievement in itself. After rustling every joint of four-inch to be found at Yale, Cushing, Ripley and adjacent towns a hurry up call was sent to Tulsa on Tuesday morning for more pipe. In response to this call 15 trucks left Tulsa in the afternoon loaded with 15,000 feet of four-inch pipe. This pipe was strung along the line and the trucks were back in Tulsa Wednesday morning.

To facilitate stringing the pipe at night an automobile was driven close behind the trucks. Headlights were adjusted so that joints could be rolled off at the proper point. The loaded trucks were kept moving continuously by this method.

Tuesday morning it became apparent to the men in charge of putting in the new line that help would be needed outside of the regular pipe line gang on the job. Since experienced workers were scarce a truck was sent to Ripley, another to Yale and another to Cushing. These were parked in the main street of each town while the driver shouted: "Anyone that wants to work jump aboard."

The gang of high school boys who responded to the call soon learned the trick of handling pipe tongs and showed remarkable speed with the work. Twin State men in the field decided quickly that it would not be necessary to season the green crews with experienced pipe liners. As a matter of fact they decided that a few real pipe liners would do more harm than good by pointing out to the boys that they didn't need to lay pipe so fast.

At the end of the first nine hours work the young fellows were going strong and wanted to stay on the job longer for the usual time and a half pay for overtime. A truck was pany had $120 worth of sandwiches and the work went on. Three dozen big flash lights were bought and used to provide light for the night work.

When midnight came Tuesday the boys were still willing to continue but demanded more food. The company had 0120 worth of sandwiches and coffee brought out and the high school lads continued working for a full 24-hour shift when they were relieved by the regular crew. After a good sleep the high school boys were back on the job again and stayed another 24 hours straight until they finished the job.

Refinery Market Corrections

Corrections on prices in Refinery Market Table in this week's issue are:

June 6th Prices

Oklahoma—60-62, 400 e.p. gasoline should carry dagger; 124-126 white crude scale wax, 2.25 to 2.50; 38-40 straw distillate, 3.25; 28-30 fuel oil, -.975-$1.025; 26-28 fuel oil, $.95; 24-26 and 22-26 fuel oil, $.925-$.950; 18-22 fuel oil, $.90-$.925; 16-18 fuel oil, $.85-$.875; 14-16 fuel oil, $.85.

Kansas—18-22 fuel oil, *$1.

North Texas—38-40 straw distillate, 3-3.125; 24-26 fuel oil, $.85-$.95.

North Louisiana—Cracked gas oil, 3.25; uncracked gas oil, 3.25.

New England—gas oil, 5.58; fuel oil, $1.73.

May 31st Prices

Pennsylvania—52-54 naphtha, 8.50-9; 54-56 naphtha, 8.50-9.50; 58-60 naphtha, 8.75-9; 64-66 straight-run gasoline, 10:00-10.50; 68-70 straight-run gasoline, 350-360 e.p., 10.50-11; 68-70 straight-run gasoline, 305-320 e.p., 16-18; 64-66 blend and 60-62 blend, 8.50-9.50; 45 w.w. kerosene, 6.375-6.875; 46 w.w. kerosene, 6.875-7.375; 47 w.w. kerosene, 7.25-7.50; 150 No. 3 neutral, 28-29; 650 steam refined, 11-13; 600 flash, 15-18; 625 flash, 26-29; 600 Oil City E., 17.25-18; 600 B. filtered, 25.50-26; cold test, dark filtered, 31.50-32; Long residuum stocks, 60-65, 450 flash, should read 5½ color; 80-85, 440-450 flash, 34.50-36; 80-85, 450-460 flash, 35-37; both grades wax, 2.70-2.875; 36-40 fuel oil, 4.75-5.125; 30-34 and 28-32 fuel oils, 4.625-5.

Oklahoma—64-66, 390 e.p. gasoline, 7-7.25; 64-66, 375 e.p. gasoline, 7 -7.25; 68-70, 350 e.p. gasoline, 7.50-7.75; 64-66 blend, 6.25; 180 No. 3 neutral, 9.50-10.25. 38-40 straw distillate, 3.25; 28-30 fuel oil- $1-$1.025; 26-28 fuel oil, $.95; 24-26 and 22-26 fuel oils, $.925-$.95, nominal; 18-22 fuel oil, $.90-$.925; nominal; 16-18 fuel oil, $.85 nominal; 14-16 fuel oil, $.85.

North Texas—38-40 straw distillate, 3-3.125; 32-36 uncracked gas oil, 2.625-2.75; 24-26 fuel oil, $.90-$.95.

Kansas—18-22 fuel oil—$1.

North Louisiana—56-58 U. S. motor gasoline, 6.75-7; Grades B and C natural gasoline, prices should be daggered, to show nominal prices.

May 23rd Prices

Pennsylvania—both grades wax, 2.60-2.75.

New England—30-32 gas oil, 5.75.

Prairie Shipments For Month of May

TULSA, June 4—Shipments of the Prairie Pipe Line Co. in May were 5,641,515 barrels, the highest they have been since October, 1922, and the third consecutive five-million barrel month. May shipments were greater than those of April by 156,-689 barrels. Daily average in May was 181,984 barrels, as compared with 182,827 barrels in April.

Prairie shipments for the past six months have been as follows:

Month	Shipments	Daily Average
December, 1926	4,331,958	139,741
January, 1927	4,850,793	156,477
February	4,736,228	169,151
March	5,449,688	175,796
April	5,484,826	182,827
May	5,641,514	181,984

NEW YORK—Hoyt Sherman, until recently secretary of the New England Oil Refining Co., Boston, Mass., resigned that position and on June 1 became associated with the Venezuela Gulf Oil Co. at its New York office.

TULSA, June 3.—W. H. Anders, manager of sales for the Columbia Gasoline Corp., Monroe, La., was in Tulsa this week stopping on a tour of his company's properties in Oklahoma and the panhandle of Texas.

HOUSTON, June 6.—Mid-Kansas Oil & Gas Co.'s No. 1 Smith-Taylor well, which extended the Yates pool of Pecos county three-quarters of a mile northwest, tested 175 barrels an hour, June 5, when it was deepened to 1278 feet.

L. H. Griffiths, agent at Victoria, B. C. for the Imperial Oil, Ltd., has been transferred to the company's headquarters at Toronto, Ont.

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The scale of the chart is uniform. You know what that means in terms of more accurate interpolation.

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The amazing qualities of accuracy, dependability and performance can best be demonstrated by a trial installation. Get in touch with our nearest branch office.

This is the segmental lever and float which translates the uniform float motion into a uniform pen travel. Regardless of the position of the float, the pen arm multiplies the movement of the float UNIFORMLY throughout the entire scale of the chart. This relationship is constant.

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THE COMPASS OF INDUSTRY

AN ORIFICE METER WITH NO INHERENT ERROR

Sealers Recommend Pumps That Show Flow Of Liquid

By Ward K. Halbert

N. P. N. STAFF WRITER

CHICAGO, June 4

THE report of the Twentieth National Conference on Weights and Measures, held in Washington on May 26, made recommendations favoring the universal adoption of gasoline pumps that show the customer the flow of gasoline.

The report was brought to Chicago by William F. Cluett, deputy city sealer, who represented Chicago and the state of Illinois at the conference.

"The ruling will be in effect July 1, 1928, unless modified by the next conference," Mr. Cluett says. "This does not discriminate for or against any type of pump now in use," he adds, "but may require auxiliary equipment for certain types of pumps in the event it is finally placed in force." The report says in part:

"All liquid-measuring devices, other than those of the visible type, shall be equipped with a device which will indicate whether or not the system is properly filled before delivery is begun." The report goes on to say that this shall not be construed to prohibit check valves on discharge lines.

Recommendations of this conference have a more direct effect on oil companies in Chicago and Illinois than in many other places because state and city laws give them the weight of legislative enactments as soon as they become effective.

The director of trade and commerce of Illinois and the sealer of weights and measures of Chicago both are directed by statute to be guided by recommendations of the U. S. Bureau of Standards.

Great commotion took place in the Chicago oil community shortly after Mr. Cluett's return because of the interpretation placed on his story by the local daily papers. By an incomplete statement of the situation it was made to appear that all piston pumps would have to be junked at once and replaced by visible ones.

S. F. Bowser & Co.'s Chicago office reported to Mr. Cluett that large orders had been held up by customers' telegrams and the factory was suffering considerable inconvenience and expense.

Mr. Cluett stated to NATIONAL PETROLEUM NEWS that he had been busy with the telephone for nearly two days answering questions of oil men who believed they were about to be legislated out of large investments in equipment.

"The action of the conference can not be legally in force in Illinois for a year," he said, "and even then will not be retroactive. That important part of my statement to the press was not published."

The conference also made some recommendations about the future form of glass measures for dispensing motor oils. They have to do with assuring the customer full measure and are as follows:

"1. Bottles used for the sale of lubricating oil shall be made of clear, uncolored glass and only in sizes heretofore specified under the heading 'Liquid Capacity Measures.' They shall be made to contain their indicated capacities at a temperature of 20°C (68°F), and they shall not be subdivided.

"2. Each bottle shall have its capacity clearly blown or otherwise clearly and permanently marked in or on the side of the bottle, and in or on the side or bottom the name, initials, or trade-mark of the manufacturer thereof.

"3. Bottles shall be provided with a clearly defined graduation line blown or otherwise clearly and permanently marked in or on the bottle, and extending at least halfway around it which indicates the correct capacity, and with the words, 'Fill to line' or a similar or suitable inscription clearly and permanently marked in or on the bottle and clearly referable to this graduation line.

"This line shall in no case be more than 0.10 inch in width and the bottom edge of the line shall define the top of the meniscus of the water which is used in the test of the bottle. This graduation line shall be placed so that it is at least a quarter inch below the bottom of any metal top when this is screwed firmly into place. The capacity of that portion of the bottle above the bottom of the graduation line shall be at least 3 cubic inches.

"4. When a bottle is equipped with a spout, this shall be so constructed that free and unobstructed drainage is provided. This specification shall be construed to require that there be an effective air vent in the spout and no shoulder or other obstruction tending to result in a trapping of the liquid being delivered. The spout shall not be over 6 inches in length measured from the point of contact with the top of the bottle to the tip of the spout.

"There shall be no tolerance allowed in deficiency."

Treasury Makes Depletion Ruling

WASHINGTON, June 3.—The Bureau of Internal Revenue, of the treasury department, in I. T. 2350, makes the following ruling on depletion of oil and gas well:

"Taxpayers are entitled to an allowance for depletion in the case of oil and gas wells, under section 204(c)2 of the revenue act of 1926, regardless of whether there is a depletable capital sum based upon cost or March 1, 1913, value: Accordingly, an allowance for depletion based upon the income from the property during the taxable year as provided for by such section constitutes a proper deduction, even though no entry thereof is made and no account is charged off on the tax-payer's books."

Ratio Given of Autos To Stations

Staff Special

TULSA, June 6.—At a recent hearing of the government cracking patent suit, testimony submitted by the Standard Oil Co. of Indiana indicated that in 1925 there was one filling station or bulk station to every 222 automobiles in the states where that company does business. In 1913 there were 194 cars for every filling station and bulk station. This would indicate that motor cars were being put into use more rapidly than filling stations in that particular territory, a condition contrary to generally accepted ideas.

As far as the Standard Oil Co. of Indiana itself is concerned, cars in service have increased over three times as fast as Standard stations, the testimony showed. Other companies, however, have increased their marketing facilities at a much faster rate.

In 1913 there were 253 cars to every Standard station, 835 cars to every station of competing companies and 194 cars for every station of all companies combined. In 1925 there were 811 cars for every Standard station, 306 cars for every station of other companies and 222 cars for every station of all companies combined. In 1926 there were 847 automobiles for every station owned by the Standard. Figures on competitors were not given.

Late Tank Wagon Change

CHICAGO, June 7.—On June 5 Standard Oil Co. of Indiana reduced tank wagon and service station prices of gasoline 1 cent at Minneapolis and St. Paul, to 14 cents and 16 cents respectively at both points, including 2 cent state tax.

Pacific Coast Not Likely To Upset General Oil Markets This Year

By W. E. Green
N. P. N. STAFF WRITER

LOS ANGELES, June 3.

WITH fair co-operation by all branches of petroleum industry in California, the general situation can be expected to show much improvement before the end of the year. This conclusion comes through study of production of crude, refinery operations, shipments outside of Pacific Coast trade territory, increased consumption of practically all products and other factors.

If the price of crude and other products had been slightly higher the past few months, the situation at this time probably would have been improved here. Low prices were brought about by conditions in the Mid-Continent, and California cannot be charged with "rocking the boat."

In daily production of crude oil in California, the outlook is growing better almost every week. For instance, during September, 1923, daily average production of crude reached 858,750 barrels, the heaviest ever known for the state. But during December, 1923, daily production had declined to 706,750 barrels.

During December, 1926, daily production had fallen to 606,294 barrels. Daily average production of crude oil in California during 1925 was 630,541 barrels, against 614,019 barrels daily average for the year 1926. During January, 1927, the daily average was 651,125 barrels, falling to 642,240 barrels in February and 639,862 barrels in March. April daily average production was 648,870 barrels, but May average will be less.

Major companies in California realized production of crude should be curtailed, and without any public discussion, many wells were closed in, until, at this writing, the total shut in production of both heavy and light crude in California is at least 90,000 barrels, daily average. Much of this is heavy crude.

As a result of curtailment of production and considering shipments of various products to points outside of Pacific Coast trade territory, total storage figures are fairly normal. The past three years consumption of all products has shown healthy increases. Total stocks of all products increased only about 1,000,000 barrels during the last 19 months, with indications they will hold approximately the same the next few months, unless prices of various products show further declines.

August 31, 1925, stocks of all petroleum products were 146,279,913 barrels, against 157,316,309 barrels Dec. 31, 1925. On Dec. 31, 1926, total stocks were 145,616,176 barrels against 147,299,345 barrels April 31, 1927. The past several months, production of crude in the Mid-Continent has been constantly increasing, and California production has been holding up, but in spite of this, conditions are not nearly so bad as some would suspect from the general public talk of over production, low markets and so on.

It is interesting to study refinery conditions. For instance, during Jan., 1926, 53 plants were operating at 76.44 per cent of indicated capacity of 693,200 barrels. This compares with 48 plants operating during Jan., 1927, at 75.61 per cent of indicated capacity of 782,875 barrels. During April, this year, 49 plants with indicated capacity of 793,800 barrels, were operating at 74.11 per cent. In January, last year, 23 refineries in California were shut down. This number had increased to 31 by April, this year.

NATURALLY, refinery output has shown an almost steady increase the past two years. Output of gas oil, fuel oil and residuum in Jan., 1926, was 11,685,129 barrels against 12,133,148 barrels in August, 1926, and 11,623,782 barrels in December, same year. During January, this year, output was 12,528,375 barrels, and 12,059,218 barrels in April.

Output the first four months this year increased each month over the same month of the previous year indicating that production during 1927 will show a fairly healthy increase over 1926.

For gasoline, during the last 16 months consumption and shipments have been increasing, as well as production. During January, 1926, California refineries produced 3,849,694 barrels of gasoline, against 4,252,559

Balance Sheet on California Gasoline

(Figures in Barrels)

1926	Produced	Shipped	†Increase in Stocks	Indicated Consumption	Daily Average Indicated Consumption
January	3,849,694	1,472,289	196,089	2,181,316	70,365
February	3,301,739	1,112,036	503,166	1,686,536	60,234
March	4,008,601	1,104,635	623,621	2,280,345	73,559
April	3,967,489	1,858,970	*41,561	2,150,080	71,669
May	4,252,559	1,862,487	*136,164	2,526,236	81,491
June	3,838,975	1,233,568	*200,884	2,806,291	93,543
July	3,899,264	1,690,018	*129,926	2,339,172	75,457
August	4,203,431	1,787,669	*177,286	2,593,048	83,647
September	3,986,387	1,292,776	55,271	2,638,340	87,944
October	4,374,839	1,590,062	80,275	2,704,502	87,242
November	4,339,265	1,629,142	541,138	2,168,985	72,299
December	4,760,430	1,744,795	364,969	2,650,666	85,505
		18,378,447			
1927—					
January	4,908,997	1,314,192	1,696,219	1,898,686	61,248
February	4,526,755	1,932,317	363,983	2,230,455	97,659
March	4,727,350	1,741,240	496,098	2,490,012	80,323
April	4,934,202	1,765,919	92,183	3,076,100	102,536

†Total stocks of California gasoline held by refining companies were 13,498,000 barrels April 30, 1927, according to Bureau of Mines; 10,941,000 barrels Jan. 1, 1927 and 9,648,000 barrels Jan. 1, 1926.
*Decrease

Operating Status of California Refineries

	No. Plants Shut Down	No. Plants Running	Daily Crude Capacity Barrels	Per Cent Capacity Operating	Daily Av. Crude Runs To Stills Barrels
1926—					
January	23	53	693,200	76.44	529,876
February	24	53	700,200	75.32	527,398
March	24	53	700,200	75.75	530,404
April	23	55	717,950	72.66	521,680
May	...	59	748,350	74.29	555,919
June	25	55	790,525	69.81	551,871
July	24	56	790,525	70.15	554,572
Aug.	24	56	822,125	69.13	560,372
September	25	54	810,800	72.22	585,571
October	27	52	806,800	69.35	559,507
Nov.	27	52	806,800	69.42	560,063
December	28	51	794,800	69.82	554,921
1927—					
Jan.	32	48	782,875	75.61	591,954
February	31	49	783,875	77.30	605,974
March	31	49	786,875	72.03	556,803
April	31	49	793,800	74.11	588,324

Shipments of All California Petroleum Products

	Barrels 1926	1927
January	6,824,338	6,759,964
February	6,126,296	8,029,049
March	6,417,903	7,408,356
April	7,482,862	7,629,484
May	8,028,566	
June	6,419,046	Changes
July	7,619,964	1927 over 1926
Aug.	8,085,573	Jan.
Sept.	7,112,821	Dec. 64,374
Oct.	7,532,829	Feb.
November	6,228,249	Inc. 1,902,753
December	6,531,691	March
		Inc. 990,453
	84,410,138	April
		Inc. 146,622

barrels during May and 4,760,430 barrels in December, of same year.

During January, 1927, total production of gasoline was 4,908,997 barrels, with production smaller in February and March, but in April, the production increased to 4,834,202 barrels, establishing a record.

During 1926, total production of gasoline included 1,256,238 barrels of cracked gasoline. The use of natural gasoline for blending also entered the picture. During January, 1926, of the total gasoline produced, 384,541 barrels were blends, against 547,660 barrels in October of the same year. Blended gasoline output the first four months of 1927 averaged 482,404 barrels per month.

Natural gasoline plants are beginning to make finished gasoline. During most of 1926, finished gasoline made by natural gasoline plants averaged monthly from 4318 barrels to 5730 barrels. The first three months of 1927 held to about the same average, but, during April the monthly output jumped to 13,927 barrels, the increase being brought about by the installation of blending stills as the price of natural gasoline declined.

California Output of Cracked Gasoline by Months

	1926	1927
January	4,346	374,127
February	9,623	309,708
March	2,609	372,232
April	.....	303,039
May	5,671	
June	16,746	Figures
July	19,142	In
August	.....	Barrels
September	57,355	
October	317,633	
November	330,177	
December	492,936	
Total	1,256,238	

Finished Gasoline Manufactured at California Natural Gasoline Plants

	1926	1927
January	5,730	4,483
February	4,286	4,500
March	5,518	4,495
April	4,924	13,927
May	5,211	
June	5,105	Figures
July	5,160	
August	4,974	In
September	4,411	Barrels
October	4,443	
November	4,318	
December	4,324	

Natural Gasoline Blended at California Refineries

	1926	1927
January	384,541	416,644
February	301,059	437,122
March	405,246	517,694
April	385,328	558,156
May	384,535	
June	337,822	Figures
July	278,662	In
August	392,207	Barrels
September	330,120	
October	547,660	
November	451,095	
December	474,180	

Shipments of California Fuel Oil.

	Barrels 1926	1927
January	2,985,876	3,615,961
February	2,578,927	4,185,754
March	2,505,293	3,513,592
April	2,759,931	3,558,547
May	2,659,578	
June	2,837,560	Changes
July	2,708,819	1927 over 1926
Aug.	3,651,519	Jan.
Sept.	2,687,306	Inc. 630,085
October	3,427,289	Feb.
November	2,625,296	Inc. 1,606,827
December	2,721,212	March
		Inc. 1,008,199
	34,148,606	April
		Inc. 798,616

California Output of Gas Oils, Fuel Oils and Residuum

	1926	1927
January	11,685,129	12,528,375
February	10,444,675	11,613,563
March	11,564,639	12,114,561
April	10,979,732	12,059,218
May	11,922,313	
June	11,396,308	Figures
July	11,683,268	In
August	12,133,148	Barrels
Sept.	12,046,606	
October	11,736,204	
November	11,314,904	
December	11,623,782	

Pacific Coast Stocks of Heavy Crude Below 20°, Including All Grades of Fuel Oil

	1925	1926	1927
January	59,174,519	87,380,630	89,390,079
February	60,086,146	87,515,041	89,107,872
March	61,014,124	†89,237,660	89,015,603
April	63,139,602	**86,291,516	89,666,735
May	65,620,145	88,475,401	
June	68,585,073	89,074,507	American
July	72,298,732	88,362,629	Petroleum
August	*79,602,289	88,452,937	Institute
September	82,769,283	88,572,233	Figures
October	84,455,136	88,588,410	In
November	85,614,278	88,606,574	Barrels
December	86,519,383	88,707,499	

* Includes 1,129,865 bbls. previously reported as refineable crude.
†Includes 800,000 bbls. heavy crude not previously reported—working stock of a pipe line company.
**8,214,864 bbls. tank farm oils burned (only part was heavy or fuel oil)

Several California natural gasoline plants have blending stills ready for operation but they are run only when plant owners are not able to sell their natural gasoline at satisfactory prices. It is possible that production of finished gasoline by California plants will show further increases, if plant owners feel that conditions warrant such action on their part.

Just recently, a complete report for 1926 has been compiled by the Bureau of Mines of shipments of various petroleum products from the Pacific Coast to points outside of Pacific Coast trade territory. With this report, which is the work of J. W. Mashaw and E. T. Knudsen of the San Francisco Bureau of Mines station, it is possible to work out some interesting tables.

For instance total shipments of all petroleum products to points outside of Pacific Coast trade territory during February, March and April increased over the same months last year, but January movement was slightly lower.

Shipments of light or refinable crudes the first four months of this year decreased when compared with the same months in 1926; but refinery runs increased and stocks of refinable crude have shown an almost steady decrease for the past 16 months.

Shipments of fuel oil are also encouraging, increasing every month so far this year over the same month last year. Shipments the first four months this year indicate an increase of 4,043,727 barrels over the first four months of 1926.

Shipments of gasoline have also increased practically every month, as will be noted by reference to an accompanying table. This table outlines the indicated Pacific Coast consumption by months, with consumption in April fixed at 102,536 barrels, daily average, far exceeding any period during the past 16 months. It had never been possible to work out daily average indicated consumption on the Pacific Coast until the Bureau of Mines furnished complete shipment figures. Thus it will be seen that, in spite of

Runs, Shipments, Stocks of California Light Crude

1926	Refinery Runs Barrels	Shipments Barrels	†Total Stocks Barrels
January	16,426,153	1,500,862	43,802,077
February	14,767,150	1,279,221	44,463,968
March	16,442,508	1,510,696	43,564,186
April	15,650,415	1,646,254	*38,393,564
May	17,233,488	2,284,882	37,044,292
June	16,556,139	1,333,898	35,340,238
July	17,191,741	1,891,306	33,548,115
August	17,619,545	1,096,682	32,152,958
September	17,567,146	1,429,921	30,308,093
October	17,344,716	1,083,408	30,323,321
November	16,801,877	941,330	30,224,135
December	17,202,549	915,279	30,835,057
Total		16,913,739	
1927			
January	18,350,573	770,923	31,176,493
February	16,967,267	1,255,570	29,913,353
March	17,570,889	913,651	29,500,917
April	17,649,726	997,090	29,418,335

†A. P. I. figures.
*8,214,864 bbls. tank farm oil burned.

Richmond, Ind., April 28, 1927

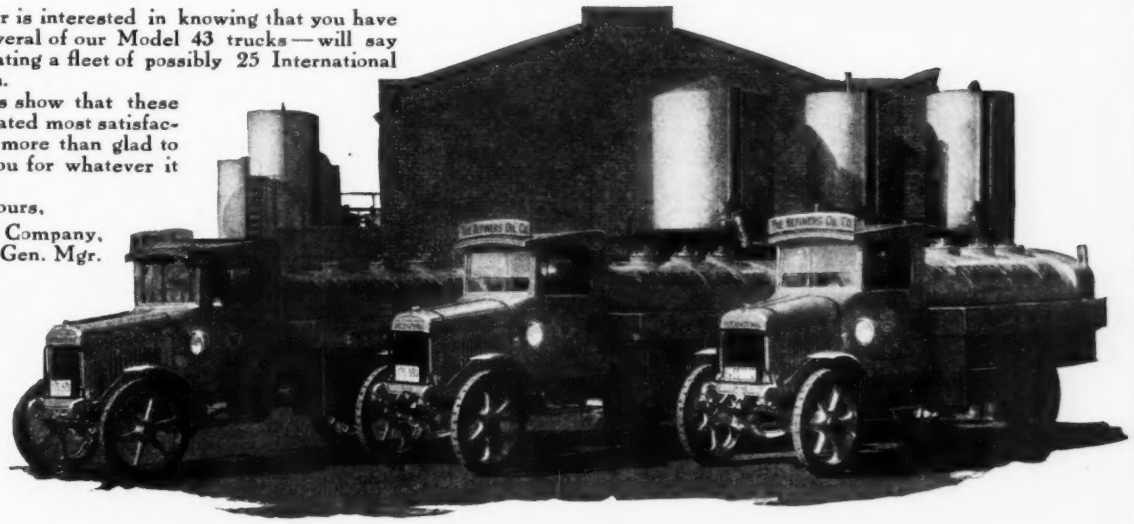
International Harvester Company, of America, Inc.
Richmond, Ind.

Gentlemen:

"—the writer is interested in knowing that you have photographed several of our Model 43 trucks — will say that we are operating a fleet of possibly 25 International Harvester trucks.

"Our records show that these trucks have operated most satisfactorily and we are more than glad to pass this on to you for whatever it may be worth."

Very truly yours,
The Refiners Oil Company,
W. E. Talbot, Gen. Mgr.



For *Oil Field* and *Oil Delivery* Rely on INTERNATIONAL TRUCKS!

Holdenville, Oklahoma
January 20, 1927

"Dear Sirs:

I have been using your trucks for nearly three years here under road conditions that couldn't be worse and when I got ready for new equipment I replaced every outfit I had with Model 63 (3-ton) International Trucks.

My action in the above mentioned replacements should speak for itself. I don't think the Trucks can be equaled when it comes to spotting the load.

Yours very truly,
By *H. E. Thomas*"

Wewoka, Oklahoma
January 21, 1927

"Gentlemen:

I have driven International trucks since 1924 and if there has been any test that I have not put them in I don't know what it is. In my experiences with these trucks I find that I can make locations easier with your Model 63 than I can with similar priced trucks. I am considering making some changes and in the event I can come together with your local man I expect to be driving a new Model 63 soon.

Very truly yours,
M. LINDLEY"

The International line includes the Special Delivery for loads up to ¾-ton, 4 and 6-cylinder Speed Trucks of 1¼-ton and 1½-ton sizes, Heavy-Duty Trucks ranging from 1½-ton to 5-ton sizes, Motor Coaches, and McCormick - Deering Industrial Tractors. We will send catalogs on request.

[See the trucks at the nearest branch or dealer]

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(Incorporated)
606 So. Michigan Ave. Chicago, Illinois

THE TIDAL OIL COMPANY OPERATES 45 INTERNATIONALS

large increased output of gasoline, increased consumption and shipments are taking care of the surplus.

According to figures of the San Francisco office of the American Petroleum Institute, stocks of gasoline have reached a high figure of 14,565,364 barrels, April 30, against 10,957,487 barrels at the end of December, 1925. This figure for April 30, does not tally with the Bureau of Mines report on gasoline held by refining companies and probably includes stocks on hands of other distributors. But consumption is constantly increasing, and shipments are holding up and it is likely that shipments will increase during the summer.

Various other tables accompanying this article give data an petroleum products, production, shipments, stocks, appear with this article.

Motor Oil Dealers Hand Picked By Head of Company

CHICAGO, June 3.

FILLING station operators and garagemen who are not merchandisers can not have Velvet Seal motor oil to sell. This is the fundamental principle upon which the Consumers Refining Co., which compounds and distributes this oil, bases its sales plan. Here is how the company goes about finding the type of dealer it wants to carry its oil.

R. C. Schilling, president of the company, says it is easy to make a preliminary selection, that is, choose the station at which the company prefers its motor oil be sold. All he has to do is to drive around the neighborhood where he wants a dealer and pick out the cleanest and most orderly independently-operated filling station. Of course, if it is owned by a large oil company there is no chance for it to handle his oil, but every community, especially in a large city, has a growing number of privately owned stations. From these Mr. Schilling picks the best looking one and sets out to sell the owner on Velvet Seal.

His first move is to drive by the place occasionally and buy something. If the owner is a good merchandiser he is able to get acquainted with him quickly. Most live dealers try to know their customers.

This accomplished, the compounder calls on the prospect and even warms a chair at the station sometimes, being sure not to stay too long and wear out his welcome. Meanwhi he watches his prospect do business, observes his work and hears him talk. He gets a line on his character, particularly his honesty, and business sagacity. When he is convinced about those things he talks business.

When he begins his selling talk he explains why he has been so interested in watching the dealer's business methods. The station owner is assured that he a hand-picked man to represent Consumers Refining Co., if he will agree to do so. And then he is told about Velvet Seal oil.

"I never heard of it!" is the first sentence uttered by the prospect in nine cases out of ten, according to Mr. Schilling. And right there is where the two men get down to business.

"Your customers trust you, don't they?"

"Yes, I think they do."

"They ask you questions about gasoline, motor oils and greases and seem to take your advice. You have been in the neighborhood for years and have built up a reputation for honesty. Couldn't you sell these people an unadvertised oil on your own personal recommendation if you knew absolutely that it was as good as any oil made?"

"Yes, if I knew it was good."

It is then up to the compounder to find out what is necessary to convince the station owner that the oil is good. Most of them have some pet tests that they like to subject an oil to. The emulsion test is a favorite. Others want it tested in a laboratory. A few want to try it in their own cars. The Consumers Refining Co.'s policy is to let the prospect have his way, test the oil any way he likes, or at least assure him he is at liberty to investigate its merit in any way he wishes.

"We are a small company," the salesman will say. "There are only two men active in it. I am the president, and the other active man is W. M. Murray, the treasurer. We don't have an office in LaSalle street. Our headquarters are 16 blocks from downtown. We can't afford to buy national advertising. Our distribution is limited to a few large cities. Our dealers have to be real merchandisers. They have to sell our oil with 'word of mouth' advertising and a few little helps we give them. But they are paid for their trouble. They make more money on every quart than they do on the oils that are easier to sell."

Velvet Seal is among the high priced lubricants but the advertising of it is slight. There are a few show cards, some dignified circulars and some small signs. But the name has probably never been published in a paper of 1,000,000 circulation. The filling station owner that retails it, may be sure that no motorist will ever stop on his drive and ask specifically for it.

"As far as substitution is concerned," Mr. Murray said, "no dealer is going to be tempted to substitute our oil. He may sell it to the casual passer-by who says 'Gimme quart o' oil,' but as a rule such customers expect a 25-cent oil and our goods will cost him more. After we select a man we are pretty sure he is not the kind of a man who does crooked business, but we are protected further by the fact that the oil is not in demand from the transient customers of our dealers.

Humble Refused Damages for Refinery Losses

Washington, May 31.—The Interstate Commerce Commission has ruled against the Humble Oil & Refining Co. in its effort to recover approximately $112,977 with interest on account of losses suffered in the operation of its 10,000-barrel refinery at Hearne, Tex. The refinery was built in 1923, operated two years, shut down and dismantled.

"Construction of the refinery at Hearne was apparently a mistake of judgment resulting in financial loss for which complainant seeks reimbursement at the carriers' expense," said the rate body in connection with an order dismissing a formal complaint brought by the Humble. The Humble alleged that the freight rate charged on petroleum and its products from Hearne, Tex., to Baytown, Tex., 180 miles, for export and coastwise movement was unreasonable, unjustly discriminatory and unduly prejudicial. It asked for a rate no greater than 15 cents per 100 pounds, that being the amount of the rate from Sheveport, La., to Baytown, 277 miles.

When the refinery was established at Hearne the Humble, according to the report, asked for a rate of 20.5 cents which was and is the rate from what is known as the north Texas group, a group extending from Hearne on the south to Vernon, Tex., on the north, about 300 miles. From all points in that group the rate of 20.5 cents applies to Baytown, although the hauls range from 180 to 484 miles.

EDEN, N. Y.—L. L. Burnham, who has been distributing Gulf Refining Co.'s products at Eden, N. Y., has been elected president of the Refiners Distributing Corp., of Buffalo, N. Y. The company distributes Gulf Gasoline and Supreme auto oils in Buffalo and vicinity.

Rain, Mud, More Rain and Deeper Mud Explains Low Country Gallonage

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, June 7.

WHEN a tractor is required to pull a hearse to the cemetery and every car in the funeral cortege has to be given a lift with the tractor there isn't much chance for a tankwagon driver to deliver gasoline in the country.

That's the story of the representative of one large distributing company operating in Minnesota, and other companies report somewhat similar conditions.

The floods in the lower half of the Mississippi valley have not been the sole cause of the small gasoline gallonage in the Middle West thus far this year. Road conditions have been extraordinarily bad in a greater part of the Standard Oil Co. of Indiana marketing territory.

In eleven upper Mississippi valley states gasoline tax payments were only 5.9 per cent greater the first two months of the year than in the same period in 1926.

THE Minnesota commission of an Oklahoma company graphically describes conditions in the following letter:

"You state that my sales have been very low for the first 15 days of the month (May). Anyone who has traveled the roads and knows conditions down here would naturally expect that. When light cars are being pulled out every day with teams and tractors on the graveled highways, how are trucks with loads on them going to go through these same places, to say nothing about crossroads that are not graveled? I have been working from 10 to 14 hours trying to get through and actually have been getting about four hours work done each day.

"Last Wednesday I started out on No. 7 which is considered a good graveled road. I got out about four miles and was lucky to get that far. Came to a soft place where I could jump on the road and shake the earth for ten feet on all sides of me.

"A farmer with a few cans of cream went through while I was there and the horses went down to their knees in mud. How can you expect a truck to go through a place like this? There was nothing for me to do but back up about 20 rods and go back and try another road. By careful driving and lots of good luck I managed to get out about seven miles to a place where the Home Oil truck spent six hours the day before.

"Four horses could not move it until they dug it out and hauled a load of flax straw to put under the horses and truck to give them footing.

"There was no use trying to go through this so I went back two miles and around another route. Finally reached the place I was headed for, left 110 gallons. I had about 150 to start with as I could not haul a full load.

"On this trip I covered about 30 miles when the actual distance under normal conditions would be about 18. It took me from 7 in the morning until 3 in the afternoon.

"Saturday morning I left town at 7, went out about 10 miles on the only good road in the county, left 120 gallons and a half barrel of oil at one place. Then I started to another place which had an order in for six weeks which could not be delivered. After plowing through mud in low for nearly a mile I came to a hill that I had no chance of climbing.

"I walked about 80 rods to a farmer's house and got him to hitch up his team and take his barrel down to the truck. Also gave him a half dollar to go down the road a short distance and get his neighbor's barrel so that I could fill them both. They told me there hadn't been a truck on the place since I filled them last November.

"If there hadn't been a truck there for five months you must realize conditions were not very good. That was my sixth time on those two orders. I had spent a whole half day on one trip and then had to give it up. Under normal conditions about two hours would have taken care of those two orders.

"I arrived back in town about noon, hauled two loads to the service station and, after dinner, started out four miles east of town to fill two barrels. These farmers lived about 80 rods off of the highway. I got stuck as soon as I left the highway, worked about a half hour trying to get out and couldn't, so I went up to one of the farmers and got him to bring his team and pull me the entire distance up to his house.

ON THIS trip I delivered 110 gallons of kerosene and gasoline, 10 gallons of oil and some cup grease. It took me about 4½ hours, when I could have taken care of it in 1½ hours under normal conditions.

"I came back to town and started out to a point where I knew I could unload a full load if I could get there. I went about five miles on the pavement and three miles off the pavement and had to give it up. I started back but got stuck in a place I had gone through a short time before. Had to give a farmer $1 to pull me out. Got back to town about 8 o'clock.

"Oil trucks of all kinds have orders to stay off of roads in one township for the last two weeks. How are we going to deliver oil if we can't use the roads? There was a funeral out there last week and they hauled the hearse with a tractor, something that was never heard of in this county before. They hauled every car through one strip of about 200 yards with tractors.

"Why don't we put out more stuff?

"I have another order here that is six weeks old and I will make you a present of a $10 bill if you will take my truck and deliver it inside of two days without being pulled in. If road conditions don't improve, don't look for anything different right soon from what I am doing right now.

"As it is now a man works 12 hours to get four hours work done."

"Money, money everywhere, and not a place to bank!"

When the last bank in Afton, Ia. closed recently, it left the Spencer & Perry Oil Co. of that city, along with other business houses and citizens, without a place to bank.

Nothing daunted, Mr. Perry, a partner in the oil company which bears his name, helped organize a new bank. This new bank took in deposits of $63,632.63 on the opening day.

Mr. Perry is one of the heaviest stockholders and a director of the bank, according to G. R. Spencer.

ST. JOHNSBURY, VT.—A service station has recently been completed here by the Caledonia Fuel & Supply Co. The company is handling Ethyl gasoline which is the first time it has been made available to the motoring public in this section of New England, according to reports.

P.I.W. Light Gauge Drum

Swedged Hoop Drum I.C.C. Container

I-Bar Hoop Drum I.C.C. Container

U-Hoop Drum I.C.C. Container

Friction Cover Drum

Removable Head Drum

G-E-M Barrel I.C.C. Container

P.I.W.
STEEL PLATE CONSTRUCTION

P. I. W. Products

"Pennsylvania" Tank Cars
Oil Refinery Equipment
Tanks up to 120,000 Bbls. capacity
Agitators
Stills
Condenser Boxes
Smokestacks
Standpipes
Water Tanks
Penstocks
Riveted Steel Pipe
Metal Ladles
Annealing Boxes
Blast Furnace Equipment
Storage Bins
General Light and Heavy Steel Plate Construction
P. I. W. Steel Shipping Barrels and Drums

PIW Service is World Wide

Geared to the New Buying Policies

THE steady trend of industrial buying policies to lower inventories and more frequent deliveries finds PIW in excellent position to render unusual service.

Ample shop facilities, large supplies of materials, sufficient to meet even the most improbable demands, and an adequate manufacturing organization enable us to give rapid-fire volume production at short notice.

Mass buying power based on mass production gives us manufacturing economies impossible on a smaller scale. Added to the unquestioned excellence of PIW design and fabrication, it enables PIW drums to compete successfully in world markets on any basis, whether it be quality of product, service, or price.

Branch Plant—Beaumont, Texas

AGENTS:

7005 York Road, Philadelphia, Pa.....Geo. W. Bakeoven
Chicago, Ill.....536 West 25th Street, N. A. Dohrmann
Cincinnati, Ohio....224½ East Fourth Street, J. A. Bauer
Boston, Mass...74 W. 2nd St., N. S. Wilson & Sons, Inc.
Detroit, Mich.....222 West Larned St., C. R. Harvey
Wilmington, Del.....4052 Du Pont Bldg., John Keesey
Buffalo, N. Y.....1579 Niagara St., John Carey

THE PETROLEUM IRON WORKS COMPANY

NEW YORK
CHICAGO
SHARON, PA.
HOUSTON
TULSA

Station Men Learn True Picture of Business When Told Costs

CHICAGO, June 3.

THE filling station operator should be taken, to a greater extent, into the confidence of his employer for the good of their mutual business, W. J. Gerwe, Vacuum Oil Co., recently told a meeting of Chicago oil men.

Mr. Gerwe suggested to owners of a small number of service stations that they should show their station men graphically the costs of operating their own stations, telling the men what part of the money they took in for a gallon of gasoline went to pay rent or property investment interest, what the upkeep amounted to; what percentage was represented in cost of goods, operators' salaries and so on. Another way of getting the true picture to the station men, he said, would be to show them how many gallons of gasoline and oil they must sell each day before the company can make a penny of profit.

"Don't let the station salesmen imagine the money they turn in at night is all profit, or nearly all," Mr. Gerwe said. "Let them know what a gallon of merchandise costs and make them understand that it has to be paid for in a strict businesslike way. Tell them of the departments of your business, the bulk plant, the tank trucks, the leased stations, and the company-owned stations, and make them understand as clearly as the management that each department must pay.

"Bring the illustration right down to the filling station at which a given employe works; tell him of the cost of the lease or the investment in real estate; tell him of the investment in equipment and building and drives; show him what the weekly cost of operation is at that station—salaries and all. Then show just how much merchandise that station has to handle each week to earn a profit. Show how much each man has to sell to make the station a success and be a success himself.

"This explanation will lead conveniently to weekly quotas for each man. Do not, however, place all the emphasis on the consequences of failure. Show also the consequences of success. Make it clear that each man who improves his gallonage will soon begin to enjoy the fruits of his success. The employer has a right to expect loyalty, enthusiasm and co-operation in his plans from every man in his organization. But the men, in turn, have a right to expect inspiration by example, intelligent advice and plans, and assurance of moral backing from the employer.

Keep Clean Currency in Station Till

EXPERIENCE has shown many women drivers were lost as customers of some particular station because they were given dirty bills to put into their fine afternoon purses, W. J. Gerwe, Vacuum Oil Co., told oil men in Chicago recently.

Women drivers are increasing in numbers. They set out to shop in the afternoon, or for a bridge party, with good clothes and clean gloves on. A woman does not have to be very fastidious to object to having dirty money handed her by a station man who has just come from a greasing pit.

Stations could keep a pile of clean bills for women and the man that makes change for them should see that his hands were clean of oil or grease.

"If you expect your station men to be 'on the jump,' down at work on time with a shave and a bath, meeting the trade with a pleasant smile and a cheerful 'Good morning,' you must set the example. If you have an appointment with one or more of these men at 9 a. m., be there. And be there on time! Don't come dragging in at 9:30 or 9:45 with a stubble on your face and a dead cigar in your mouth. Set them an example! Be there and be presentable!

"Let your men understand that competition is keen. There are now about 80 automobiles in the United States for every drive-in filling station. That is not enough business to keep each station alive if the business were divided equally. The way for any filling station to get more than its share of the possible business is to have better salesmen, and to give better and more cheerful service. A station now must have more than its share of the possible business to survive.

"A great deal of thinking and planning must be done by the man that directs a chain of stations. Salesmen should be allowed to exercise their originality and each permitted to use his personality in his business, but all stations should follow a prescribed sales program. A customer who is pleased with the service he gets at one of your stations should not be disappointed when he patronizes another. This prescribed plan of merchandising should be elastic, however, never becoming so rigid that it can not be changed to incorporate any new idea developed in the experience of anyone connected with the company. And before you advertise uniform service, be sure you can deliver it. Be in a position to serve before advertising service.

"Clean money for kid gloves, is a little thing but important. The woman driver is a market of growing importance. Women are coming to drive cars more and more. The car is a family conveyance. Many a wife takes the husband to business, the children to school and does some shopping with the car every day. She buys the oil and gasoline as well as the groceries and meat. If she hands a station salesman a $5 bill she will be displeased to receive change that looks like it might have been lost a few days in the crankcase draining pit. But she will be gratified to get money she can put in her pocketbook with the clean handkerchiefs and powder puff and feel safe about it. It will pay to keep a separate pile of clean bills to be used in making change to women customers."

Western Reserve Oil Men Complete Organization

CLEVELAND, June 3.—Organization of the Western Reserve Petroleum Club by oil men of four northeastern Ohio counties including Cuyahoga, of which Cleveland is the seat, has been completed with the election of R. C. Heil, Commercial Oil Co., Cleveland, as president. L. B. Davis, Cities Service Oil Co., Cleveland, is vice-president, and J. G. Malone, Indian Oil Products Co., Cleveland, secretary and treasurer. Directors are: K. H. Naumann, Lake County Oil Co., Painesville; B. W. Browne, Great Western Oil Co., Cleveland; J. A. Steuber, American Petroleum Products Co., Cleveland; and Robert Lock, Lock Oil & Gas Co., Ashtabula.

The club will hold a dinner June 17 in Hotel Cleveland to hear C. O. Hoover, research engineer, Deepwater Oil Refineries, Inc., Houston, and G. A. Votaw, city sealer of Cleveland. Mr. Hoover, who spoke before 17 petroleum clubs in Ohio in May, will elaborate on his subject, "Lubricating Oils." Mr. Votaw will tell what the sealer's department expects from gasoline dealers in the use of self measuring equipment. New Ohio pump regulations go into effect two weeks after the Cleveland meeting.

To Handle Pennsylvania Oils

GRAND RAPIDS, MICH., June 4.—The Lighthouse Gas & Oil Co., with headquarters here, plans to take on a line of Pennsylvania motor oils for distribution in Michigan and later in Indiana, according to M. V. Cheesman, owner.

The Editors' Viewpoint

National Petroleum News

Oil Marketing Is No More "Overbuilt" Than Other Lines of Business

By Warren C. Platt, Editor

ONE of the easiest things in this world is to generalize, especially if one has two or three facts. More facts make it harder to generalize, because they tend to show that a general statement cannot be made.

There is probably no branch of the oil industry on which more general statements have been made that are subject to serious question than the marketing of petroleum and its products.

We have all heard, for quite a number of years, a good deal about the alleged waste in marketing—the alleged duplication in marketing facilities, particularly the so-called service stations. In all these discussions, as this paper has many times pointed out, we are inclined to overlook a fundamental fact, and that is, in no line of business are the facilities in exact economic balance with the demand and particularly at every point of that demand, especially according to the likes of those already in the business. Supplying the needs of this world, especially in the marketing division of any industry, is not an exact science by any means. While some science can be used nevertheless, it is largely judgment.

Undoubtedly there has been poor judgment used in the erection and in the location of some oil marketing facilities, but we have the same thing in practically every other line of business. While it is all right to point it out in the oil industry, nevertheless, in justice to the oil industry, the same errors of judgment should be pointed out in other lines of business.

What the oil business oftentimes forgets is that there are a large number of vigilant organizations of its customers—organizations which do not exist to any extent in other lines. We refer to the automobile clubs. While these clubs do a great deal of good, nevertheless, they have tended to concentrate more attention upon some features of the oil industry than those features deserve. If these automobile clubs would also appreciate that men wear pants and have to buy pants, they probably could find a whole lot to say in regard to the pants' industry. Pants' stores come and go and nobody cries from the housetops about it, but, when an automobile service station comes and goes, much is said about the "waste" in the oil industry.

We have said repeatedly that the only way that a seemingly 100 per cent economic efficiency could be approximated in the number of and location of oil marketing facilities would be for the state to get some infinite wisdom and to take charge and issue exclusive license to this corner, to that town and so on, a most un-American and un-constitutional thing, which no business man would want.

Since the world is not going to be operated, at least in our day and age, on that basis, then it means that men of varying judgment and experience will make ventures of varying size into oil and all other businesses. Some will be successful and some will fail, but there is no other way that the world will expand.

It is useless to point to the failures as the product of an industry. They are the product of their own training, or lack of training, and their own lack of intelligence. There may be a few more stations than there would normally be if the margins in the oil industry had been normal for a number of years. If so, some of those stations undoubtedly will be going out of business. But stations would be going out of business anyway, just as department stores, shops, factories and churches go out of business.

ONE of the records that all businesses, use as a barometer of the state of business, is the record of failures from week to week. Why then should anyone get particularly excited about failures in the oil business?

There have been some of these careless statements in a number of otherwise excellent addresses and talks on the subject of service stations and oil marketing of late. No particular good is being done the oil business or the individuals in it by thus over-emphasizing some things which are perfectly natural to every business.

There has been comment to the effect that the oil industry has not stopped to develop business around its existing service stations. The statement has been made as if the industry was exceedingly wasteful in this regard. We beg to differ. Some companies undoubtedly have entirely overlooked what can be done about building up gallonage, but we know of many other companies that have developed a considerable degree of skill in building up gallonage at stations. We have printed much regarding that in this paper in the past ten years and more. We have consistently urged that oil companies, before putting in another station, see if they can't build up gallonage around their existing stations. There is probably just as much poor salesmanship and poor management in the oil industry as in any other line of business, but we question

IT'S GOING TO BE TOUGH ON THIS GUY IF THEY EVER FIND OUT HIS NAME

if there is any more. Why point to the failures in the oil industry all the time?

One thing which has hampered a proper size-up of the situation has been the widely varying figures as to the number of service stations and also the difference as to the definition of a service station. We have seen the number of drive-in service stations estimated as high as 500,000. Sane people, have put them seemingly at 250,000. We say "seemingly" because they also call them "outlets."

There is no census of service stations. NATIONAL PETROLEUM NEWS has made many careful checks and canvasses and has checked its figures with those of some of the big oil companies, who have also made similar careful checks in their territory and it is our opinion there are not more than 100,000 drive-in service stations in the United States at present. Most of these are owned by oil companies—some are owned independently of oil companies. By a drive-in service station we mean a station devoted to the sale of oil and gasoline with accessories an incident; but we do not mean a garage, nor a roadside station where oil and gasoline are only an incident.

In addition to these 100,000 stations, there are an innumerable number of roadside stands and of course garages and single pumps—probably four or five times larger in number than the real service stations.

In estimating gallonage it obviously is not fair to take all these outlets and treat them all alike with the same average number of customers. Nor is it fair to take all the service stations and consider them in one class, because, there again, there are good service stations, well located, and there are poor service stations improperly located in the first place, or from whose districts business has moved away. There are undoubtedly many places where more drive-in service stations will be located and which will pay, due to the growth in the automobile business, due to the growth in neighborhoods and due to work on certain traffic ways, to say nothing of the newcomers possibly being able to render better service than some of the older service station owners.

We know of one big oil jobbing company that is going to put in some 60 new service stations this spring and summer in a well populated district. That company is conservative in its operations and cautious in its investment of new capital, and it has been successful in its operations. Who can say that this construction policy should not be carried on? One must investigate the reason that this particular company has for this plan. The reason is largely that the company figures that it can handle more gasoline through its own stations, at less cost than through the dealers of varying types with which it has been doing business for many years. Like practically every other oil company, it has found that the average garage man, hot-dog stand and so forth, does not make a good customer. He is a poor credit risk—he is a poor salesman and cannot be considered a dependable outlet for the most part. Should this company be prevented from improving its position?

Let the discussion of service stations and marketing methods continue by all means, but let a better job of analyzing be done and let us appreciate there are many factors about the oil business that you find in all other lines of business and that oil is no worse than any of them—in fact, it is better.

In The Second Hundreds Now

FROM recent reports and sales of Sweetland Filters, it is very evident that the number of refineries using the contact process is well into the second hundreds.

Sweetland Filters made this process practical.

Sweetland Filters are made by United Filters of Hazleton, Pa.

So order new machines for your installation.

UNITED FILTERS CORPORATION

Hazleton, Pa.—Los Angeles Office, Central Building

Other Offices in Chicago—New York—Salt Lake City

Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

The Vermont Farmer

said after reading

SHAKESPEARE

"HE'S got a lot of my ideas." And Elmer wasn't so far wrong. For isn't it the fact that the Bard of Avon expressed in his plays the ideas that most people have tucked away in the back of their minds.

And here's where we hitch in *our* story. The point being that in our business we try to get the other fellow's ideas. Not of the Vermont Farmer, but of the average oil jobber.

And isn't that what business is—getting the other man's idea and fitting your services to it? Let us have *your* idea of oil. We'll show you with a sample or a car load, how well we *can* get it.

EMPIRE OIL WORKS, Inc.,
Oil City, Pa.

Tractor Oils
Motor Oils
Industrial Oils

EMPIRE OIL WORKS INC. OIL CITY, PA.
PENN EMPIRE
100% PURE PENNSYLVANIA OIL

Kerosene
Gasoline
Petroleum

When you buy Penn-Empire you get the best.

Barnsdall Managers Inspect Plants

WICHITA, KAN., June 4.—Discussion of sales problems and plant inspection were features of the annual meeting of district sales managers of the Barnsdall Refineries, Inc., held at the company's various plants in Oklahoma and Kansas from May 28 to May 30 inclusive.

George D. Locke, vice president of Barnsdall Corp., Chicago, was at the head of the sales managers and other members of the sales staff who attended the meetings. First meeting was in Tulsa on May 28. From there the party left for Okmulgee to inspect the company's refinery. Sunday was spent at the refinery at Barnsdall, Okla. and from there the party was transported in a private car to Wichita on May 30. On the evening of May 30, the men in charge of the Wichita refinery gave a dinner at the Lassen Hotel for the visitors.

Attending the meetings, besides Mr. Locke, were: H. L. Hughes, sales manager, and J. L. Evans, assistant sales manager, Tulsa; W. Wiley Rice, assistant sales manager, Chicago; J. T. Owens, lubricating engineer, Tulsa; E. M. Coffey, superintendent of the refinery at Barnsdall; R. S. Granger, superintendent of the Okmulgee refinery; J. T. Kerrin and J. M. Giltner, Wichita.

The district sales managers from the various cities who attended included: J. T. White, St. Paul; D. E. King, Milwaukee; George W. Zell, St. Louis; W. W. Nicholas, Davenport; J. R. Pringle, Des Moines; E. R. Burger, Detroit; and D. H. Roberts, Oklahoma City.

Mrs. Frances Spencer Dead

CHICAGO, June 3.—Mrs. Frances Spencer, mother of Frank E. Spencer, president of Spencer Petroleum Co., died at her son's home in Evanston, May 29, Sunday morning. Mrs. Spencer had been ill for a week with pneumonia. She was 81.

Services for members of the immediate family were at a chapel in Evanston, May 30. Funeral and interment was at Centralia, Ill., May 31. Mrs. Spencer is survived by two sons and two daughters.

MONROE, La.—The Kellogg Oil Co., which sold its bulk and service station on Feb. 1 to the Louisiana Oil Refining Corp., Shreveport, has been inactive since that time, although it has retained its cash, account books and charter. C. L. Kellogg, proprietor, is enjoying a vacation with the exception of the time he devotes to collection of old accounts.

A. G. Olofson, president of the Blue Light Gas & Oil Co., Logan, Utah, is back at work after an operation for appendicitis.

Use of Gas and Air in Restoring Pressure to Old Pools

By Lester C. Uren
Professor of Petroleum Engineering, University of California

Article 1

PREVIOUS articles of this series have been devoted to a discussion of the principles controlling the production of petroleum by expanding natural gas, a form of energy with which the oil is endowed by nature during the period of accumulation within the reservoir rock. Methods used in controlling this natural pressure to secure maximum efficiency in oil production, have also been explained.

It has been shown, however, that the most efficient methods of control yet developed, utilizing only the natural forces latent within the virgin oil deposit, are incapable of securing more than a small portion—possibly 15 to 25 per cent—of the oil actually present in the reservoir rock.

Nature has apparently provided an insufficient amount of energy to accomplish expulsion of a larger percentage of petroleum from our oil deposits, by the methods of exploitation and control commonly employed, and at the rate which oil producers now seek to establish and maintain. More efficient methods of primary exploitation may yet be devised, and it has been shown that a more leisurely rate of recovery than that with which the present-day oil producer is content, would tend to increase the percentage of ultimate recovery.

Many petroleum deposits have reached or are approaching economic exhaustion in so far as utilization of natural forces is concerned, and yet contain upwards of 75 per cent of their original oil content. A Committee of the American Petroleum Institute recently estimated that present known oil fields in the United States contain 26-billion barrels of petroleum not recoverable by the use of natural energy, or nearly five times as much as the oil that will naturally flow from the same areas by present commonly-used methods of recovery.[1]

The development of methods capable of diminishing this naturally unrecoverable content of our oil deposits constitutes one of the most important problems confronting the petroleum industry. Discovery and development of a method which would enable us to economically recover, say, from 50 to 75 per cent of the oil in present known fields would contribute more to building up of our petroleum reserves than the discovery of many new pools.

Oil producers annually spend many millions of dollars in the search for new pools, though it seems probable that greater reserves might be made available with smaller expenditure of capital, by seeking to improve recovery methods. The fragmentary knowledge of more efficient recovery methods which we already possess offers definite promise of success in this direction.

It will be the purpose of the next five articles of this series to present to the reader what has been disclosed in recent petroleum technology literature relative to three promising methods of stimulating oil recovery. These involve the application of artificially developed energy, or the application of forces not naturally brought to bear in production of oil by present-day commonly-used methods of flowing and pumping.

These are the so-called pressure restoration methods, the vacuum extraction method and methods involving flooding of the reservoir rock with water or aqueous solutions containing water-soluble flooding agents. Two articles, of which the present constitutes the first, will present what is known concerning the use of gas and air in restoring pressure in partially depleted oil deposits. In the present article, we shall be concerned with the principles involved in the gas-pressure restoration methods and the succeeding article will recount what has already been accomplished in their practical application.

Distribution of the Residual Oil in a Partially Depleted Oil Sand

IN AN earlier article in this series,[2] it was shown that such petroleum as is left in the reservoir rock after the natural forces associated with the oil have attained equilibrium, is concentrated by gravity in the lowest part of the productive stratum. If the wells have been pumped until even the slow-acting force of gravity no longer brings oil to them, the sands in their immediate vicinity may be completely exhausted of all free-draining oil, but far back in the sand, at points remote from the wells, the natural drainage slopes and high resistance offered by the minute pore spaces through which the oil must flow, will have caused the sands to remain highly saturated with oil.

THE oil mass will be permeated with globules of gas of varying size. These globules tend to slowly escape to the more fully drained space in the upper part of the sand, which remains saturated with gas under low-pressure. The sand in this upper gas-filled zone still remains wet with adherent oil, but all surplus oil beyond that necessary to wet the grains and form numerous minute filaments held by adhesion in the reëntrant angles between grains, will have settled under the influence of gravity to the lower part of the productive bed. A certain zone above the bottom of the stratum, and above the normal gravitational surface of the oil mass, will be maintained saturated with oil by the influence of capillary force. The lower part of the stratum is thus left saturated with oil, while the upper part, though still oil-wet, contains relatively little oil, the sand pores being filled with gas and forming a channel through which any additional gas which may escape from the oil can flow with comparative freedom.

In such an oil-reservoir stratum, containing residual oil and gas in the condition described, the natural forces originally latent within the deposit have been largely dissipated, and such energy as still remains within the residual low-pressure gas, is counterbalanced by pore friction, capillarity and adhesion—forces opposing movement of the rock fluids. Equilibrium between the expulsive and retentive forces is attained, and no further readjustments can occur unless the physical conditions surrounding the system are in some way altered.

One method of altering this equilibrium condition—with which we are particularly concerned in this article—is by injecting a compressed gas into the partially depleted stratum to build up or restore pressure. Either natural gas or air or other inexpensive gases may be used. Compressed gas, so introduced from an extraneous source, carrying latent within it the energy with which it has been endowed during the process of compression, provides a new expulsive force which effects additional oil recovery by the same natural processes as those which caused the original nat-

[1] "American Petroleum Supply and Demand," report of the Committee of Eleven, American Petroleum Institute; McGraw-Hill Book Co., New York, August, 1925.

[2] See National Petroleum News, issue of February 9, 1927.

Five Articles on Artificially Stimulating Recovery

IN THE accompanying article of the Uren series, appearing exclusively in National Petroleum News and devoted to improved production methods, the author gives the first of five special articles on artificial methods of stimulating oil recovery in old fields.

Pointing out that present methods of production allow but from 15 to 25 per cent of the oil in the sand to be brought to the surface Uren, a leading authority on the principles affecting movement of oil in the sand, says, "The development of methods capable of diminishing this naturally unrecoverable content of our oil deposits constitutes one of the most important problems confronting the petroleum industry."

He sees for the future a period when oil operators, in place of spending millions in search for new fields, will devote part of those sums to finding methods that will allow a greater percentage of the oil to be taken from the sands in known pools.

These five articles in detail will describe what has been disclosed so far in three methods of stimulating recovery, 1, by restoration of pressure to the sand; 2 by application of a vacuum; 3 by flooding the sand with water or solutions containing water-soluble flooding agents. The first two articles deal with gas pressure restoration.

An entirely new idea in writing oil field technical articles has been introduced in the Uren articles, which will be continued throughout the year in National Petroleum News. Each article, or series of a few articles on one particular subject, gives the reader the underlying principles involved; gives references to what literature has earlier been published on this subject, and brings the subject up to date by telling of late research or commercial work.

These articles provide a means whereby the practical operator, too busy to read extensively on these subjects, may keep up with developments as they occur, regardless as to whether they are in the realm of chemistry, engineering, or actual oil country practice in fields with which he is not familiar.

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ural gas to expand and expel oil from the pores of the reservoir rock. Customary practice provides that certain favorably situated wells penetrating the reservoir stratum shall be used exclusively as a means of injecting compressed gas into the reservoir rock, while other wells shall be operated in the usual manner for oil production.

Three Methods of Applying Gas Pressure to Oil Sands

WE RECOGNIZED three different systems of applying extraneous gas pressure in the manner described, the operating procedure differing somewhat in each. In one of these, which may properly be regarded as straight-forward "pressure restoration", gas is forced into the productive sands at the locations where conditions seem favorable while all of the surrounding wells selected for oil production are shut in until the entire producing sand is under elevated pressure. Several months, or perhaps a year or more, will be necessary to build up the desired pressure in the reservoir rock.

The voids in the sand are thus filled with high-pressure gas and some gas is taken into solution in the oil. When the desired field pressure is reached, the supply of gas is cut off, while the oil wells are permitted to produce under the influence of the artificially developed field pressure. After the artificial pressure thus developed has become exhausted by continued oil production, the entire process may be repeated if the probable value of a third "crop" of oil justifies the cost.

The second system of applying extraneous gas energy to a pool might be termed "pressure maintenance" in contradistinction to "pressure restoration". Here, instead of waiting until the natural gas pressure in a pool is nearly exhausted, we adopt the plan of recompressing the gas flowing from the wells, after separating it from the oil, and immediately forcing it back into the productive sands, while the field pressure is still high. There would seem to be no necessity for operating wells through long years of declining production at high unit production costs, for, by maintaining pressures at a point well up toward the maximum initial field pressure, a high rate of recovery can be maintained and the ultimate recovery obtained in a shorter time.

Incidentally, the ultimate recovery will in all probability be higher by this means, since the drainage radius will be maintained near a maximum figure and there will be less loss of oil in the sand due to viscosity increasing with loss of dissolved gas. These and other advantages of the "pressure maintenance" process, will be more thoroughly discussed in a later section.

THE third method of applying extraneous gas energy in stimulating oil recovery may be appropriately described as a "gas drive". Here, we force gas into the sand at one or several wells, simultaneously drawing oil and gas out from others, maintaining a relatively high pressure in the vicinity of the gas intake wells, and a low pressure in the vicinity of the pumping wells. By this means, we establish and maintain a continuous flow of gas from well to well, the moving gas serving to pick up and carry oil along through the sand in the form of films or gas bubbles; or, perhaps actually forcing a "bank" of oil ahead of the gas toward the producing wells. Various plans for applying gas drives have been suggested, wherein gas from two or more pressure wells may be brought to bear upon the oil from different directions, thus sweeping out an area of some width between the wells, rather than confining the flow to channels along definite lines. These methods will be discussed in greater detail below.

Principles of Pressure Restoration

WHEN we force compressed gas into the free spaces of a reservoir stratum from which there are no outlets, the pressure is always a maximum in the vicinity of the intake wells. From these high-pressure centers, the gas flows through the open spaces of the sand to the areas of lower pressure. Gradually the compressed gas forces its way outward, following preferably, the more permeable channels in the sand, until areas remote from the intake wells are influenced.

While the gas naturally seeks and builds up pressure within the oil-drained spaces of the reservoir rock, the intimate contact established between the oil and the gas in the sand results in a part of the gas being taken into solution, a tendency which is accelerated as the pressure is raised due to the increased solubility of gas in oil at elevated pressures. Many have assumed that gas trapped in a porous reservoir rock above the surface of an underlying body of oil, will be rapidly dissolved by the oil, and that by diffusion the entire mass of accumulated oil beneath may, in a short time, become saturated.

In view of the slow rate of diffusion of dissloved gas from a gas-oil surface, and the absence of agitation or convection currents which might bring all parts of the oil mass into contact with the gas, it seems unlikely that the oil can become saturated with gas under the conditions

prevailing, within a period of time as short as that over which commercial operations could extend. Some writers have also assumed that gas taken into solution in this way may travel through the oil by diffusion and thus escape to the producing wells without doing useful work in moving oil, but in view of the exceedingly slow rate of diffusion of dissolved gas through oil, this too seems improbable.

After pressure has been built up to the desired extent by long continued injection of compressed gas, the producing wells are opened and ejection of oil from the sand begins, under the influence of the rejuvenated pressure. Such gas as is dissolved in the oil will, of course, be effective in ejecting oil by assuming the form of expanding occluded bubbles, when pressure is subsequently released. Stimulated flow will also result from the downward static pressure of the overlying bodies of free gas. The elevated gas pressure established in the upper part of the reservoir stratum produces an equivalent horizontal pressure within the oil mass, and under the influence of this static pressure, oil may be caused to flow to the well outlets.

AS THIS is being accomplished, however, the free gas above the oil will also escape through the outlet wells unless means be taken to prevent it. The means adopted may be either artificially developed back-pressure, or maintenance of high fluid levels in the producing wells. Practice in operation of the producing wells, after pressure restoration, is identical with that appropriate for ordinary wells operating on natural original gas pressure, except that, with a relatively greater percentage of oil-drained voids in the sand, the decline in pressure will be more rapid and the gas-oil ratio probably higher. Wells may be operated by natural flow or gas-lift, and when these methods fail, by the ordinary pumping method.

Whether or not sufficient oil may be obtained from an oil sand, by additional pressure restorations, after the pressure effected by the first restoration has been dissipated, will depend upon the surrounding physical and economic conditions. In an experiment conducted in a large pressure drainage tank[3] in the petroleum engineering laboratories of the University of California, starting with an air-and-oil saturated sand under an initial pressure of 50-pounds per square inch, 20.3 per cent of the original oil content of the sand was expelled through a miniature well by the initial exhaustion of the gas. Restoration of pressure on the residual oil to 50-pounds and a second exhaustion of pressure, resulted in the expulsion of an additional 6.7 per cent of the original oil content. A second restoration and exhaustion of pressure, netted an additional 6.5 per cent, and a third 4.9 per cent.

In all, ten successive pressure restorations on the residual oil were made and the pressure exhausted eleven times, but the contributions secured from the fourth and later pressure restorations were comparatively small. The cumulative total recovery obtained by eleven exhaustions of pressure, was about 48 per cent of the saturated-oil content of the sand. The results of this experiment can scarcely be accepted as comparable with what might be expected under field conditions, but it is interesting to note that material contributions were secured by the second and third restorations of pressure.

Principles of Pressure Maintenance

THE radius of drainage of a well under a given set of sand conditions increases with the effective expulsive pressure, which, as we have seen, is largely due to the expansive effects of gas associated with the oil. A well consequently develops its maximum radius of pressure influence in early life, and, subsequently, the drainage radius continually declines as the pressure falls. In the later period of declining productivity, the drainage radius of a well must provide but a small area tributary to the well in comparison with what it enjoyed during early life. The productivity of the well is thus diminished, not only by the ever decreasing poverty of drainable oil within the well's original area of influence, but also by an important shrinkage in the areal extent of this region of influence. Much oil, started on its slow and tortuous journey through the sands when gas-pressure was high, during the early life of the well to which it was tributary, is overtaken on its way by the rapid contraction of the area of influence due to decreasing pressure, and left immobile in the sands.

CONSIDER now the advantage gained if the original field pressure, or some pressure not greatly less than this, could be maintained during the productive life of a pool. The radius of drainage of the well is maintained at its maximum. Oil once tributary to a well by the physical laws which govern its flow through the sands, remains within influence and continues its flow, until it eventually enters the well and is recovered. The ultimate recovery of oil secured by the well, and the percentage of the total original oil content of the sand recovered, are thus greatly increased.

The rate of flow of oil from a reservoir rock is also a function of the pressure, being greatest during the early period of productivity when the field pressure is high and the sand fully saturated, and declining as the pressure and the available reserve of oil within the region of influence diminishes. If we can maintain the gas pressure on the reservoir sand at a point near its initial value, the initial rate of flow will not be maintained, because the available reserve of drainable oil is ever decreasing, but the rate of recovery will be sustained at a much higher rate than is possible when the field pressure is permitted to decline. Theory indicates that the 'decline curve' of a well producing under such conditions, should be a straight line rather than the logarithmic type of curve characteristic of declining pressure.

An earlier article in this series has shown that the viscosity of crude petroleum is materially lower when it contains large amounts of dissolved gas—as is possible at high pressure—than is the case when the gas has been permitted to escape from solution by reduction of pressure.[4] Permitting the pressure to decline in an oil reservoir stratum under process of drainage, thus has the effect of partially congealing the oil in the sand,[5] greatly increasing the pore resistance to flow, and materially diminishing the volume of recoverable oil that the available natural energy is able to force into the wells.

MAINTENANCE of gas pressure on an oil reservoir rock in process of depletion, will tend to prevent escape of the dissolved gas from the oil, thus maintaining its original mobility. The oil will move through the sands toward the wells largely under the influence of static pressure of high-pressure gas in the relatively free oil-drained spaces; and in the vicinity of the producing wells where the pressure must necessarily be reduced somewhat, gas coming out of solution will remain within the oil mass in the form of occluded bubbles, thus performing maximum duty in expelling oil.

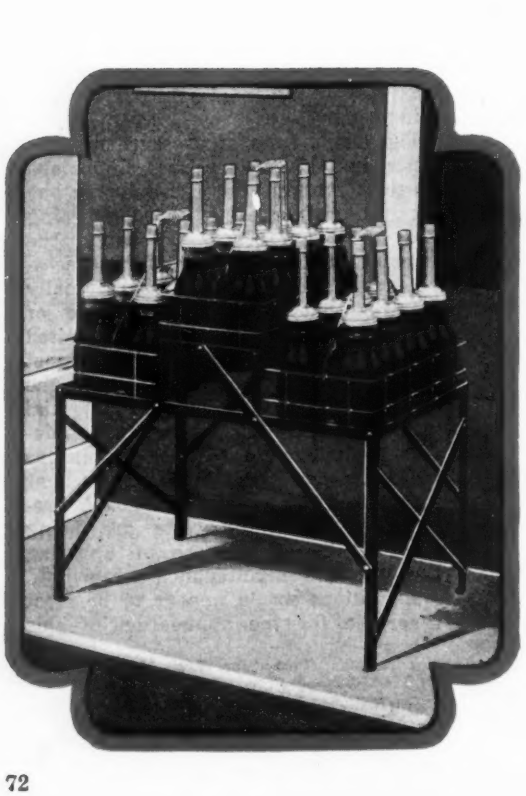
The advantages of pressure maintenance in oil recovery are so obvious it seems strange that the industry has not yet conducted a thorough-going test of this process. Probably the principal reason is that, for successful application, the method virtually requires that the entire 'structure' or area of the pool must be exploited as a unit; or, at any rate, there must be absolute conformity among all the operators in a pool in the essential matters relating to production and development practice. Such conditions seem likely to be attained in the near future, and in several oil fields, preliminary plans and tests are being made with the purpose of applying the pressure maintenance method.

Conditions would appear to be most favorable for the application of this

[3]. For a brief description and photograph of the apparatus used in this experiment, see an earlier article in this series, printed in National Petroleum News, issue of March 2, 1927, page 160.

[4]See National Petroleum News, issue of Jan. 19, 1927, page 56.

[5]. See National Petroleum News, issue of April 27, 1927, p. 73, 75.



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method when the 'structure' comprises a well developed dome or anticline in which the flanks dip at comparatively steep angles away from the structural crest. In flat-dipping formations, the high-pressure gas would probably tend to channel through the sands from the intake to the outlet wells, developing a driving effect and more or less preventing the maintenance of uniform pressure conditions. In favorable structure, the producing wells should be located well down on the flanks of the structure, while wells penetrating the reservoir rock at or near the structural crest, serve as a means of returning gas to the productive stratum. All gas produced is trapped from the oil, recompressed, and forced back into the reservoir sand through these crest wells. If the original pressure is to be maintained, additional gas will probably have to be supplied from some extraneous source.

THE constant pressure of such a body of free gas in the crest of the structure drives the underlying oil into the down-dip wells. Constant pressure conditions within the reservoir tend to prevent the edge-water lines from encroaching and also prevent the oil from flowing up into the crest of the structure, which may have originally been charged only with dry gas. Movement of oil from its original zone of stratification in the structure to overlying gas-filled zones, will cause enormous losses of oil through adhesion on sands formerly free of oil. Uncontrolled encroachment of edge-water lines will sometimes result in trapping and inundation of large bodies of undrained oil sand, the oil from which may only with difficulty be subsequently recovered.

Pressure maintenance would probably also permit of producing practically all the oil by natural flow methods, without the aid of pumps—a considerable advantage from the stand-point of production cost.

Principles of The Gas-Drive Method of Oil Recovery

The conception of residual oil being carried along with or driven ahead of artificially injected gas flowing through the oil sand, is the one generally associated with the term 'pressure restoration', but the method may more properly be termed a 'gas drive'. This method has received detailed study under laboratory conditions, and during the last 15 years, has been extensively applied in the field.

The manner in which the compressed gas enters the sand will vary in different cases, with the stratigraphic and lithologic conditions and with the distribution of oil and gas in the productive stratum. If there are two well-defined zones within the reservoir stratum, the lower of which is saturated with oil while the upper contains chiefly gas, and the compressed gas injected has access to both, it will naturally follow the path of least resistance and enter the upper, oil-drained zone. If this zone is fairly continuous, it may be possible for the injected gas to flow through the upper part of the sand above the oil surface, from the inlet to an outlet well, without entering the main mass of oil accumulated by gravitation in the lower part of the stratum. This is one cause of 'by-passing' of oil by the gas, a common difficulty in the practical application of the process.

Again, the productive reservoir may consist of a series of strata separated from each other by impervious clay or shale partings, one or some of the strata being relatively more porous or coarser-grained than others. If all strata were originally saturated with oil, the coarser-grained, more porous beds will have been more completely evacuated of their contained fluids than the others, and the compressed gas subsequently injected, having access to all, enters these beds since they offer less resistance than the finer-grained, less porous beds which may still be highly saturated with residual oil. Such beds are not necessarily the lowermost in the series.

Under such conditions, where 'by-passing' is likely to occur, the flow of compressed gas through the formation from one well to another, may result in comparatively little oil being displaced. In such cases, however, if the producing wells be shut in for a time, while compressed gas is forced in until an elevated pressure is built up within the entire reservoir, gas may be made to enter the more resistant strata. This practice, however, is essentially that which we have previously described as 'pressure restoration'. It will be seen that the three methods of injecting gas into reservoir sands, as classified and explained in a previous section, are not necessarily alternative methods, but are closely inter-related, and that any two or even all three may virtually be in use simultaneously in the same reservoir sand; or one method may, under changing conditions, be supplanted by another.

THE most favorable conditions for oil expulsion by forcing gas back into the sands, utilizing the gas-drive method, are encountered when there is no free gas space above a general oil surface in the sand in the vicinity of the wells in which the gas is introduced. In this case, the gas must directly enter the oil mass, and does so in the form of small bubbles migrating under the influence of the pressure applied from behind, along the drainage channels to the producing wells. Conditions here are ideal for the solution of a large part of the gas, the oil possibly becoming saturated with gas under the pressure prevailing. This gas-saturated oil moves toward the producing wells under the influence of surplus gas under pressure in occluded form within the oil (i.e., in the form of expanding bubbles). As the oil approaches the producing wells and the pressure is reduced, the gas previously taken into solution is also released in the form of expanding gas globules, which further assist in oil expulsion.

The lithologic character of the reservoir rock will influence the efficiency of residual oil expulsion to an important degree. If the reservoir rock is at all variable in its lithologic properties, the gas will always tend to flow through the coarser-grained and more porous channels, or through those which have been more thoroughly drained of their oil. The gas may circulate around fine-grained lenses or less porous bodies of sand, leaving them practically saturated with oil. In fact, the higher gas pressure established in the coarser sands surrounding such fine-grained or less porous lenses will tend to prevent rather than assist drainage of oil from them.

THE geologic structure also interposes limitations on the use of pressure restoration processes, particularly if the productive sands have a very pronounced dip, or declination from the horizontal. If the sands are steep-dipping, the oil, being heavier than gas, will tend to gravitate toward the down-dip locations, in preference to wells up the dip of the deposit. On the other hand, the gas shows a preference to migrate up the dip or along the 'strike' of the deposit, rather than down the dip. In a deposit with a well defined structural crest, and with steep-dipping flanks, it would seem to be a fallacious policy to operate wells penetrating the crest of the structure, for the gas would tend to rise and escape through such wells without driving out as much oil as would be possible if the gas movement could be maintained down rather than up the dip. Theory would prescribe, under such conditions, that the wells at the crest of the structure be used for forcing gas back into the productive stratum, while the down-dip locations be operated as productive wells.

Under certain conditions, however, it might be justifiable to force gas into the extreme down-dip locations, with the purpose of enlivening the oil which is frequently less saturated with gas at the lower horizons, and stimulating it to flow to near-by up-dip wells operated as oil producers. Even in this case, however, no wells should be permitted to allow escape of gas at the crest of the structure. With a body of high-pressure gas thus maintained at the structural crest, and with additional high-pressure gas flowing up the dip of the structure from wells in the vicinity of the edge-water lines, a maximum recovery rate could be established for

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the intervening wells. Incidentally, the high gas pressure developed in the lower horizons of the pool would tend to hold the edge-water lines stationary and prevent premature or irregular flooding of the sands due to edge-water incursion. Such gas as does not escape through the productive oil wells in such a system, rises to the crest of the structure and is there trapped, thus maintaining uniformity of pressure conditions on the up and down dip sides of the productive wells.

It seems probable that gas does not flow out uniformly through the productive sand in all directions from the well into which it is introduced, but rather, that it follows a certain channel, or channels, of least resistance to the outlet wells. Suppose, for example, that we had a horizontally disposed oil sand, perfectly uniform in thickness and that we forced gas into one well in the approximate center of a group, and operated the surrounding wells of the group as oil producers. If there happened to be any variation in texture of the sand, making it easier for the gas to flow to one well of the group than the others, the gas would naturally take that course, leaving the other wells of the group without stimulation.

OR, IF the sand were perfectly uniform in texture as well as thickness, and one producing well happened to be a little nearer the well through which the gas is being introduced, the gas flow will be largely toward the nearby well. Such tendencies for the gas to favor certain wells, however, can be largely off-set by operating the producing wells under variable back-pressures. Applying higher back-pressures to the more favored wells and gradually adjusting downward the pressures held on the more remote or less favored wells, will eventually bring about a fairly uniform distribution of the gas as between the several producers of the group.

Even when uniform gas distribution is attained however, it may not be assumed that the entire area between the gas well and the surrounding oil wells is brought within the influence of the elevated pressure. It seems probable that the gas does not flow uniformly outward along radial lines from the well into which it is introduced, but rather, that it tends to sweep out elliptically-shaped areas between the wells, which may be of such form as to leave relatively large uninfluenced areas between wells.

Because of the difficulty of driving oil and gas from sands of high permeability into finer-grained or less porous 'tight' sands, it would seem to be preferable in choosing the locations for the pressure wells and producing wells, to locate the pressure or gas intake wells in the tight-sand areas and the producing wells in the more porous, coarser-grained 'open' sands. If some of the producing wells were in tight and some in relatively

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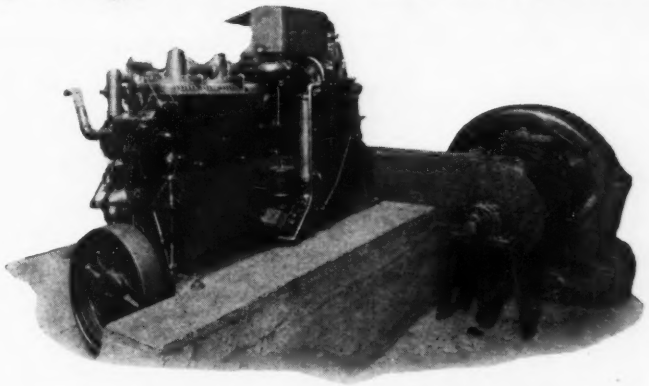

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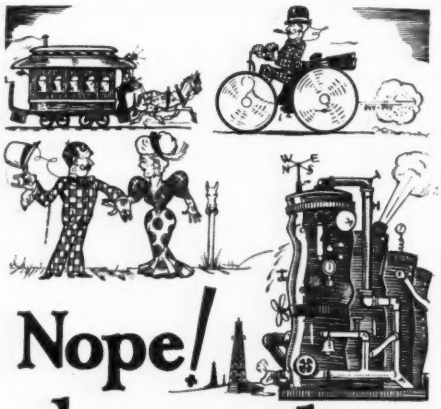

In the early days of gasoline production--and not so very long ago—almost any kind of baffle tower was used.

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open sands, gas would flow to the wells penetrating the more permeable sands, by-passing the tight sand areas and leaving them saturated with oil.

It seems probable that the principles that have been developed in the application of water drives in the Bradford Field of Pennsylvania, apply equally well in the case of gas drives. We may scatter the pressure wells promiscuously among the pumping wells, merely making an effort to secure an approximately uniform distribution of gas throughout the area to be drained. It would seem to be preferable, however, to apply the gas to a row of wells across a property, driving the oil outward in each direction toward parallel rows of pumping wells. In water-drive phraseology, this would be called a 'line drive'. Another promising plan is to apply pressure to each alternate row of wells, thus driving from four directions toward each producing well in the intervening rows. This has been termed an 'intensive drive', and would seem to offer a means of securing a high recovery in the shortest possible time. These methods or driving will be discussed in greater detail in a later article which will be devoted to the principles of water flooding.

THE most efficient spacing for gas-drive wells and the relative numbers of pressure and producing wells, will depend upon the permeability and thickness of the sand and the pressures to be employed. Tight sands require relatively more and closer-spaced pressure wells. Higher gas input pressures permit of wider spacing and a fewer number of pressure wells. A balance must be struck between these factors which will lead to the most economic result.

The rate at which the compressed gas enters the reservoir sand in the vicinity of the pressure wells has an important bearing on the successful application of the process. Often the sand will offer such great resistance that very high pressures are necessary to force the gas into the reservoir stratum at the desired rate. The energy provided for moving the oil through the sand is dependent upon both the pressure and volume of the gas that enters the pressure wells. If a given amount of energy is required to maintain the desired rate of oil production, this may be provided by a large volume of low-pressure gas or a smaller volume of relatively higher pressure gas. The pressure however, must be adequate to force the requisite volume of gas per unit of time into the wells.

When the sands are highly saturated with oil, the pressure must be high because of the great resistance offered by the oil; but as open spaces develop in the sands due to displacement of oil, 'by-passing' or 'blowing through' of the gas from well to well becomes more pronounced and the

pressure should be reduced. A relatively larger volume of gas however, must be provided. The extent of bypassing of oil by the gas is determined in part by the rate of progress of the gas through the sand. Slower progress in general, means more efficient drainage. It should be remembered however, in this connection, that the linear rate of advance through the sand is greatest in the vicinity of the wells, and that as the oil 'bank' forms ahead of the gas and moves away from the pressure wells, the volume of gas applied may be gradually increased without corresponding increase in the linear rate of advance of the 'bank'.

When the sand is tight and does not take the gas as rapidly as desired at the available pressure, the situation may be remedied to some extent by forming cavities about the pressure wells within the oil sand, the larger surface exposed at the wall of the well proportionately influencing the rate at which the gas must flow through the sand pores, and consequently, influencing also the pressure loss. Well cavities in hard reservoir rocks may be formed by shooting, and in the softer sands, by mechanical reaming devices or by the hydraulic process described in an earlier article in this series.[5] The pressure necessary at the input wells may also be reduced by forming similar cavities about the producing wells.

Air Versus Natural Gas For Pressure Restoration

THERE has been considerable discussion concerning the relative values of air and natural gas in restoring pressure on partially depleted sands, or in driving the residual oil from such sands. Air is less soluble in crude petroleum than natural gas and, according to Mr. J. O. Lewis, an outstanding authority in this field,[6] is more efficient as an expulsive agent than gas. Mr. Lewis bases his belief on the results of laboratory tests and on the theory that diffusion and movement of oil containing dissolved gas, permits of escape of the dissolved gas through the oil with consequent loss of energy. However, there are good theoretical grounds for the contrary view. Diffusion of dissolved gas through crude petroleum is known to be very slow and gas taken into solution in oil, if not rapidly diffused, should be a superior expulsive agent, for when pressure is subsequently released and the dissolved gas assumes the form of occluded bubbles within the oil mass, it is capable of doing more efficient work in oil expulsion than when it is applied merely as the static pressure of a body of free gas from above or behind the oil mass.

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[5], [6] "The Rejuvenation of Depleted Fields", by J. O. Lewis, Record of Public Hearings, Federal Oil Conservation Board, Feb. 10 and 11, 1926, pages 49-65.

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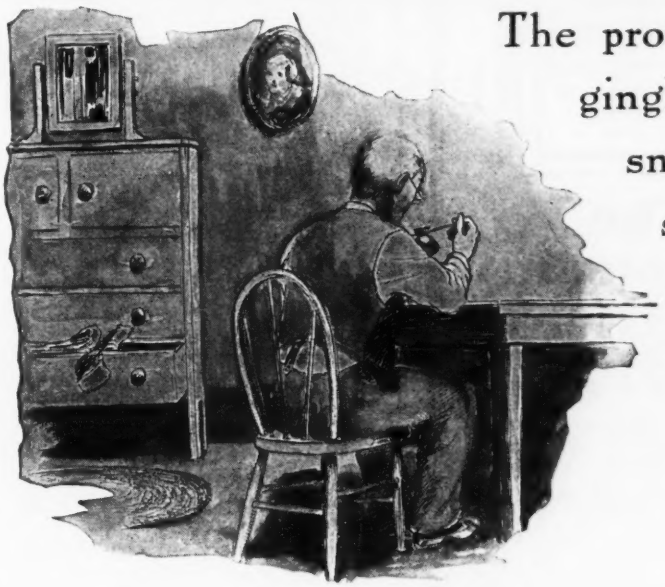

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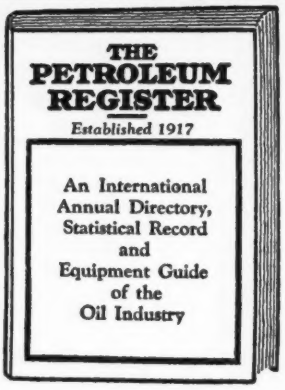

The Petroleum Register 1927

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Summary

THIS article presents a review of the general principles governing the restoration of pressure in partially depleted oil sands.

Three methods of applying artificially compressed gas in stimulating the recovery of oil are presented. These are; 1. The pressure restoration method; 2. The pressure maintenance method; 3. The gas-drive method.

Each is found to have a definite field of application under favorable conditions. The geologic, lithologic and physical factors controlling their operation are discussed in some detail. Natural gas is found to be generally preferable to air for pressure restoration and for gas driving.

This is the first of two articles dealing with the subject of gas-pressure restoration in partially depleted oil sands. The second, reviewing the practical field results obtained in the application of these methods and analyzing their economic aspects, will appear in an early issue of National Petroleum News.

Aside from the relative efficiencies of expulsion which, we may say, is uncertain at present, natural gas is less objectionable than air. The latter tends to oxidize the oil, increasing its viscosity and surface tension, and is probably productive of greater quantities of deposited paraffin and other solid hydrocarbons, which would in time tend to clog the pores of the sands and restrict flow to and from the wells. If air is used, it dilutes such natural gas as may still be produced with the oil, rendering it highly explosive when certain proportions of gas and air are admixed. In such a state, it is unsafe for use for power purposes.

Dilution of natural gas with air may reduce the gasoline content of the gas to such an extent it is no longer profitable as a source of natural gasoline, and it may be too 'lean' to use even for fuel purposes. Again, if certain types of ground waters are produced with the oil and air is used for restoring pressure or as a driving medium, the oxygen introduced with the air renders the water highly corrosive, so that it rapidly attacks the iron or steel casings, tubing, pumps and other well equipment.

Natural gas is subject to none of these disadvantages: on the contrary, its use tends to reduce the viscosity and density of the oil and it is an excellent carrier of gasoline vapor. Gas would doubtless be preferred by most oil producers for pressure restoration, where it is available at a reasonable price. Even though the gas may be rather costly, in the event that it has to be purchased, if the wells are secure against gas leakage there will be little loss in recycling and all gas used may ultimately be recovered and marketed, probably at a higher price than that at which it was valued when forced into the wells.

Refiners Oil Co. Buys Akron Marketer

CLEVELAND, June 3.—Refiners Oil Co., Dayton, O., has bought the Factory Oil Co., Akron, O., W. E. Talbot, general manager of Refiners, has announced. Factory Oil Co., was formed 21 years ago and did a large part of the gasoline and oil business in Summit county in which Akron is situated. Besides 18 of its own drive-in service stations it supplied many Independent drive-in service stations. It also had considerable smokestack trade.

Factory has a bulk plant in Akron, and operated 15 tank trucks and three or four stake trucks throughout the county. John Shutt who managed Factory Oil, will be Akron manager for Refiners. Mr. Talbot said Refiners would build six or more service stations in Akron this year.

Refiners Oil is Ohio distributor for Ethyl gasoline. The company has bulk and service stations in central, west-central and southwestern Ohio, and eastern Indiana.

Music Is Opening Day Feature

KANSAS CITY, MO.—The new service station which was opened at Lamar, Mo., recently by the Liberty Oil Co., is handling Kant-Nox gasoline, the motor fuel of the Kanotex Refining Co. The motor oil sold at this station is made by the Interstate Oil Co., Kansas City.

Roy Spear, of the Interstate company, and Roy S. Reed, of the Kanotex company, helped in the opening of this new station. Over 3000 gallons of gasoline were sold on the two opening days.

A band concert and vocal numbers were the chief attractions on the evening of May 21 and so many motorists drove to the station that night that a traffic policeman was put on the job to keep them in order, according to reports.

GRAND ISLAND, NEB.—Cummings Motor Car Co. has just opened a drive-in filling station, which it will operate in connection with its garage.

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Settling, Heating, Washing Crude Help Remove Salts and Reduce Corrosion

By Paul Runge

NO refiner who has not faced the problems encountered in refining crude oil containing salts, can appreciate the troubles which are in store for him should he find it necessary to refine such crude. Perhaps no single aspect of refining operations carried with it such worries and loss of time as does acid corrosion.

Careful observation and inspection are necessary at all times, because leaks may develop very rapidly and unless detected at once, a resulting fire may cause disaster. It is obvious that should a refiner contemplate a change in his crude supply, a careful investigation should be made before closing a contract, to determine the corrosive properties contained in the crude. Knowing this, he can immediately prepare for its prevention and correction, thus eliminating considerable expense and idle time.

The causes and chemical reactions which take place are well understood and for the purpose of this article the following will suffice. The magnesium chloride contained in the crude, upon being heated to about 223° F., is decomposed with the formation of magnesium oxychloride and hydrochloric acid.

The hydrochloric acid, which is in the form of a gas, does very little damage but when dissolved by the condensed steam, a weak and very corrosive acid is formed. In plants which have passed through the pioneering stage and have determined by experience the extent and location of their corrosion, arrangements are made for rapid replacements and methods for combating same have been installed. In the continuous tube still the location of the corrosion can be determined before operations begin.

WHERE fractionating condensers are used in which the distillates are partially cooled when leaving the condenser, the large continuous coil condenser can be eliminated to good advantage and a triple pipe subcooler substituted, with special packed gland fittings to make it possible to replace the corroded pipe within a very short time.

It will be noticed that as the distance from the point of greatest corrosion increases, the corrosion decreases, due to the weakening of the acid and the reduction in temperature. Where streams are not properly cooled the corrosion will extend as far as the run down tanks.

In plants where certain stills are operated for definite purposes and conditions of temperature are constant, the location of the corrosion can be detected in a very short time and remedial methods can be put into motion, but where heats are changed from day to day with the resulting difference of temperature throughout the system, the location of the corrosion will change as the temperatures are increased or decreased.

To be able to successfully combat corrosion, a very careful study of all existing conditions should be made including the following:

Water content of crude.

Quantitative analysis of salts in crude.

Amount of corrosion.

Quantitative analysis of acid formed.

After remedial methods have been put into effect, careful checks should be made to determine the effect of the neutralizing agent on other methods used.

STANDARD still pipe, although comparatively cheap, is unsatisfactory, because its corrosion is very rapid. Its resistance will depend upon the strength and temperature of the acid. Where conditions are very severe, still pipe will corrode in from five to seven days, especially if the weld is exposed to the acid. Wherever possible, a lap weld pipe should be used in preference to a butt weld pipe or, better still, a seamless tube. The weld should, if possible, be placed opposite the column of oil.

Where distillates exert a splashing effect or where the direction of the flow is suddenly changed, the corrosive action is greatly increased.

Cast iron pipe, although it will withstand corrosion over a considerable period, has a very bad feature in that it becomes soft, due to the iron going into solution leaving silica and carbon and a soft binder. Under certain conditions, a piece may be forced out. The rounded portion of cast iron ells are especially predisposed to this condition. A piece of cast iron which has been under the corrosive action of acid for a time is reduced to the consistency of putty and may be cut into pieces with a pocket knife.

WHERE the problem of corrosion due to sulfur is not present, the conditions are simplified by the use of brass pipe. Where attempts are made to remove the salt and water the results due to the using of brass pipe have been very gratifying. At one plant, brass pipe which had been used for one and one half years showed practically no corrosion and was again installed.

Where no attempt is made to eliminate the salt and water, the life of brass pipe is greatly reduced. In view of the above facts, it would seem that the installation of brass pipe would be a sound investment, the returns realized by the elimination of idle time due to shut downs for repairs, would in a very short time pay for considerable brass pipe.

Plants operating elaborate bubble towers are often troubled with corrosion of two or three trays and when made of steel the corrosion may be very rapid. In these cases, cast iron or brass trays will be very beneficial.

Linked together with corrosion is the problem of salt deposition in continuous tube heaters and equipment. It is hardly possible to discuss one without the other and therefore should be rightly taken up at this time. When tube heaters of smaller size are used, it is at times almost impossible to operate unless a portion of the salt and water is removed as at times the plugging up of tubes may occur after 18 hours of operation.

THE deposition of salt may be put into two classes; the first a condition in which the deposit is soft and resembles, somewhat, bottom settlings. This type is seen in fractionating condensers where only a portion of the incoming crude is used as a cooling medium and in residual heat exchangers in skimming plants where high temperatures are not used.

In this case the temperature of the vapor and residue are not high enough

Scaling! Peeling! Flaking!

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Yet painting new galvanized iron is often necessary—if only for decorative reasons. In such cases use red-lead. It runs less danger of failure than any other paint.

Here is a proved method of avoiding paint failure on galvanized iron—of obtaining an attractive finish that will last.

Allow the metal to remain exposed to the weather for at least six months. Then apply three coats of paint, mixed according to the following formulas:

Priming coat

Mix 100 pounds Dutch Boy red-lead with 3 gallons pure linseed oil and 1 pint pure turpentine. This makes 5¼ gallons of paint, and should cover 3150 square feet.

Caution: Do not merely spread the paint upon the metal and expect it to stick at all hazards. Brush the paint out well and use enough pressure to force it into every microscopic irregularity of the surface. Many a painting job of this kind has gone wrong simply because the paint was not brushed on "close."

Second and third coats

100 pounds Dutch Boy red-lead, 2½ gallons pure linseed oil, 1 pint pure turpentine and 2 to 4 ounces lampblack should be used for the second coat. This makes 4¾ gallons of paint which should cover 2850 square feet.

For the third coat, repeat the second coat formula if a light brown finish is desired. Other decorative finishes may be had by tinting the third red-lead coat to dark brown, light green, dark green or black or by using white-lead paint over the red-lead undercoating.

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to cause the salt to deposit upon the metal and it accumulates as a mash and if allowed to continue, pressure will increase. By increasing the velocity of the crude, the salt may in most cases be washed out.

The second type is seen in the tubes of the heater proper and in heat exchangers where high temperatures are used. Here a rapid evaporation of the water takes place with the result that the salt is deposited upon the metal and a building up of pressure results, which if allowed to continue will gradually plug up the tubes to such an extent that mechanical means must be resorted to in cleaning out deposits.

The plugging of tubes occurs at regular intervals and where this period has been determined, shutting down and washing tubes with hot water just before it is anticipated will save considerable time. Depending upon the size of the tubes and the amount of salt deposited, this may be accomplished in from two to six hours. The plugging of tubes seems to follow along the same line as that of coke formation in cracking, namely that once plugging commences the accumulation is rapid. In one case there occurred a pressure increase of 200 pounds in three hours, the last 150 pounds building up in the last hour. The importance of accurate and conveniently placed pressure gauges can not be too strongly emphasized.

IN ELIMINATING corrosion and salt deposition there are two principal methods in general use, but best results can not be obtained unless both methods are employed. The first method is the removal of the salt and water, the second, the neutralizing of any acid formed.

The removal of the salt and water may at times be the most important, especially where tube heaters are used. There are perhaps as many methods for removing salt and water as there are refineries troubled with corrosion, but a few general methods which can be used under all conditions may be mentioned at this time.

Settling of crude after being pumped into storage.

Heating of crude in storage.

Heating and settling before charging to still.

Washing of crude.

The first two methods are of a preliminary nature and although they accomplish little as compared to the more drastic methods, it has been shown that where these are used the results obtained are very much more satisfactory. In smaller plants where the question of inventory is of great importance and stocks are kept to a minimum, corrosion is increased.

After a tank has been filled. it should be allowed to stand for at least five days to allow as much of the salt and water as possible to settle out, especially where pumpings are from small fields where crude is not always allowed to settle for a long enough period.

Considerable may be gained during the summer months but in the winter settling out is very slow and should be augmented by installing heater coils in the tanks and by using exhaust steam to heat crude up to about 80° F.

The crude is heated to a temperature just below the boiling point of water, after which it is discharged into a closed tank of ample size to allow as much as possible of the salt and water to settle out. This should be drawn from the bottom of the tank at least every eight hours. It is better to use two tanks where installations are large and three is even more satisfactory. A common practice is to wash the crude with hot water and has given very satisfactory results.

THE second method of reducing corrosion is to neutralize the acid formed. A very convenient method is by the use of ammonia which can be bought in drums and which are very easy to handle and operate. In continuous tube still operations where all fractions are taken off as one cut before fractionation commences, the point at which the ammonia should be introduced into the fractionating systems is at a distance far enough away from the point at which condensation of steam may take place.

Regulation of the ammonia is best accomplished by the use of an ammonia pressure gauge and two needle valves. The gauge is placed at the tank, after which one of the valves is connected, the other being placed at the point of introducing the ammonia into the system. With both valves shut, the tank should be opened until the pressure gage records 20 pounds pressure after which both valves are opened the same amount with the pressure on the gage being regulated to record a constant pressure. Once the proper regulation of the tank and needle valves has been accomplished in shutting down, it will only be necessary to shut off the ammonia at the tank and when operations are resumed it is only necessary to open the tank until the gage shows 20 pounds.

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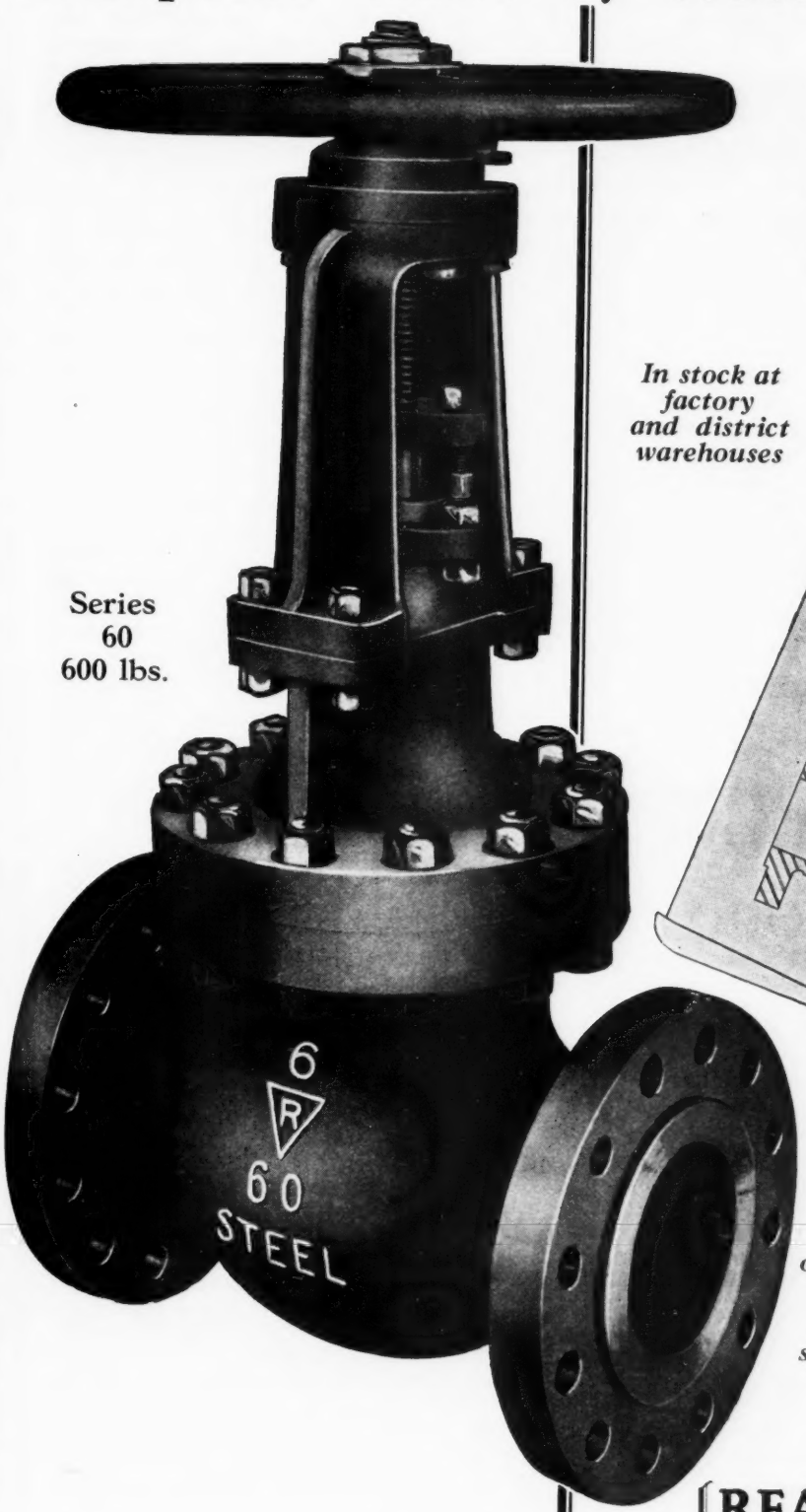

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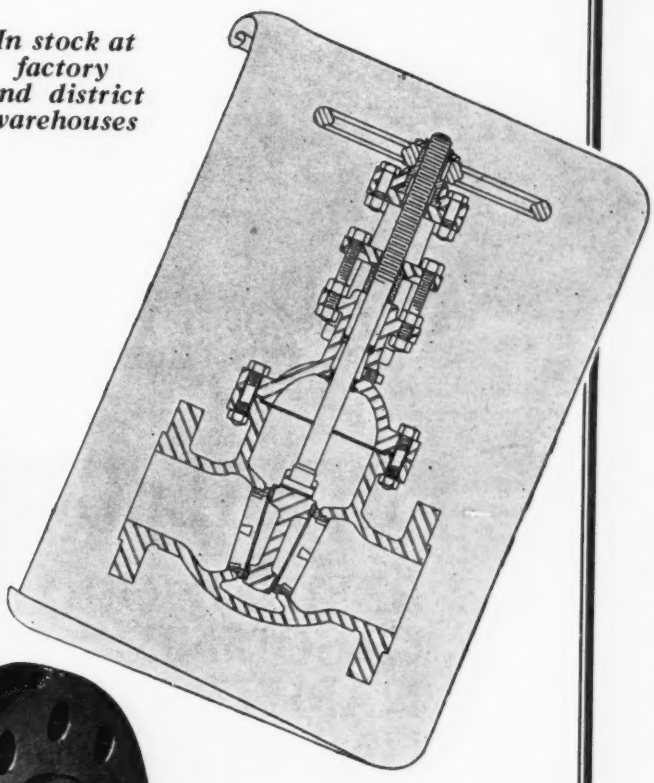

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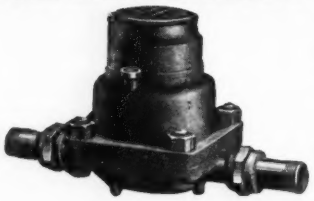

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Californians Strive to Maintain Prices

LOS ANGELES, June 3.—There is a move among the larger California refiners to stop the Independent service stations selling their products under the large company price. Three companies have demanded that service stations that buy from them take down their "Six Gallons for a Dollar" signs, or these companies will refuse to sell to the Independent service station. Another company requested its customers to remove their low price signs, without making any threats, and their request was granted in all cases except where the service station in question had a neighbor competitor with such signs exhibited.

The result of this move has resulted in threatened suits by certain service station owners, but as far as can be learned, suit has been entered against only one company. This suit was filed by the operator of eight service station, who was selling gasoline bought from the major company at 16½ cents, 2 cents under the prevailing service station for this company's product. The Independent placed signs stating he was dividing his profit with the consumer.

One station owner in the heart of Los Angeles displayed a sign for two days, asking the public to help him "fight the gasoline trust," stating that his action in dividing his profit with the public had caused the "trust" to clamp down on him.

The three companies have stood firm by all the week and a great majority of the Independents are not making any ado about the companies' stand.

Vague rumors are current that gasoline will either be lowered at service stations 2 cents, or that refinable crude will be raised 10 to 15 cents a barrel.

TULSA, June 3.—W. H. Barber, president of W. H. Barber & Son, Minneapolis, and Mrs. Barber, were visistors in Tulsa recently, the guests of Mr. and Mrs. R. N. Lambert. Mr. Lambert is manager of the Tulsa office of W. H. Barber & Son.

WARREN, PA., June 3.—A baby boy, Harry Bedell, arrived at the home of Mr. and Mrs. Harry R. Lewis, Warren, on April 30.

Mr. Lewis is vice president and treasurer of the Conewango Refining Co. here.

AUBURN, N. Y.—N. K. Spencer expected to open his new filling station here June 1. Texaco producers will be handled.

Pipe Still and Contact Filter Plant In Novel Hookup

By Paul Truesdell

N. P. N. STAFF WRITER

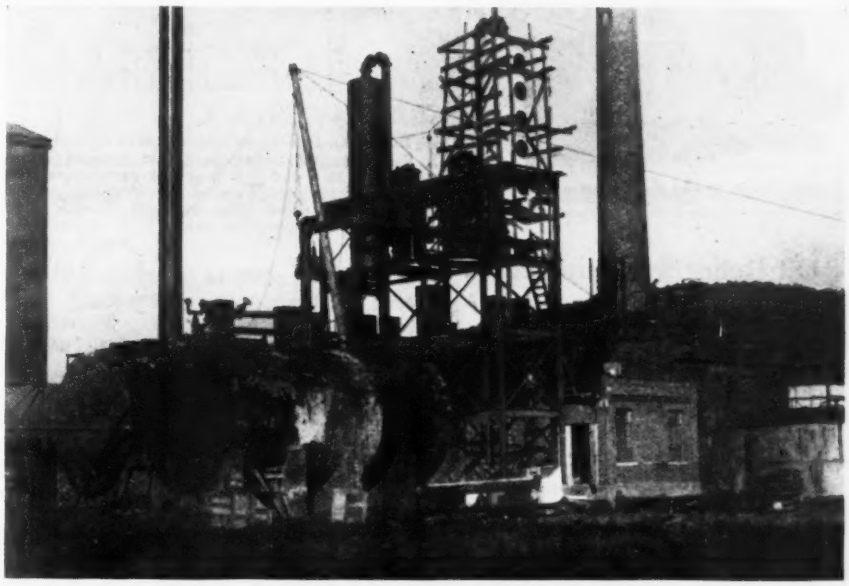
CLEVELAND, May 31

THE BRADFORD OIL REFINING CO., Bradford, Pa., is using a system for manufacturing lubricating oil from Pennsylvania crude which, so far as is known, is unique. The system involves the distillation of the crude in a circulating combination pipe still and shell still installation, filtering to color by the contact method and dewaxing by the centrifuge method.

No one of these methods, of course, is new in itself, it is the hookup of the three of them at the Bradford plant that is novel. Some troubles were met in getting the plant into operation on a satisfactory basis, as is general with new methods, but it is now working satisfactorily.

The plant is the joint work of Harold S. Bell, refinery consulting engineer, Max B. Miller, of the Max B. Miller Co., Inc., and J. H. Rose, president of the Bradford Oil Refining Co. Mr. Rose himself made the drawings for the plant layout.

The Bradford refinery was built about four years ago. Two years ago, Mr. Rose decided to manufacture bright stock or long residuum stock. The refinery had no wax plant and no filter house. Mr. Rose called in Mr. Bell as consulting engineer and Mr. Miller as an authority on filtering and dewaxing and asked their advice as to the best type of equipment to install. The plant, which has been operating several months, is the work of the three.



Bradford Oil Refining Co. plant as it looked under construction. In the foreground are the two separators resting on concrete cradles. One of the bubble towers is already in place and the other is surrounded with false work. The heat exchange can be seen close to the base of each bubble tower. The brick pump house is at the right.

THE PLANT consists of one Foster pipe still with a capacity of 1000 barrels of crude a day, two separators of 650 barrels capacity each (these are really old steam stills that were at hand in the plant), one cone bottom tank for mixing clay with the oil, one motor driven bucket conveyor for handling the clay; two six by 40-foot bubble towers designed by Mr. Bell; two Leach shell and tube heat exchangers and two steam pumps, one Wilson-Snyder and one Worthington able to deliver 350 gallons of oil per minute at 650 Fahr.; two Southwestern watercooled condensers; pumphouse; tailhouse and clay storage house.

The operation of the process is batch, one separator at a time being used in conjunction with the pipe still and the clay feeding equipment. Crude oil is pumped into one of the separators through one of the heat exchangers countercurrent to the hot vapors coming off from the top of the bubble tower. By the time the separator is half full of oil, the temperature of the oil is about 300 F., with the light vapors going off all the time. Up to that time no fuel has been used to heat the oil, the distillation of a substantial part of the light ends having been accomplished by waste heat taken in the heat exchanger from the vapors on their way to condensation. The separators are not fired.

WHEN THE first separator is about half full, the incoming crude stream is cut into the other separator and the circulating hot oil pump is started. This takes suction from the separator, shoves the oil through the oil-fired pipe still, through the clay-mixing tank and back to the shell still, then to repeat the circuit over and over.

The clay, which is Palex, of 200 mesh, delivered to the refinery in bags, is fed into the clay mixing tank at a predetermined rate by a bucket conveyor driven by a small electric motor. As the circulation goes on, the temperature of the oil gradually increases, and the vapors continually pass overhead to the bubble tower. When all the gasoline, naptha and kerosene fractions have been taken off, the bubble tower is cut out of the system and the vapors go direct to the condenser to be condensed as gas oil. The cycle is kept up until the residue in the still reaches the proper flash and fire, the temperature then being about 650 F. This takes about 16 hours for the batch.

From the separator the residuum is pumped to a dilution tank, where it is thinned down with about 50 per cent by volume of naptha. Thus diluted, the stock goes to a Sweetland filter where the clay is removed by filtering under pressure. This clay removal has been previously described in National Petroleum News as used by the Solar Refining Co. at Lima, O.

Whereas in most refineries where contact filtering is used and Sweetland filters remove the clay from the filtered oil, the clay cake in the filter is blown with air and washed with naptha, this is not found necessary at the Bradford plant. The oil is blown out of the cake with steam, leaving a relatively very dry and oil-free cake. The once-used clay is thrown away.

FROM THE filter the clay-free oil is pumped to another heating and blending tank. Here it is heated by steam coils in the tank and is further diluted to make a mixture

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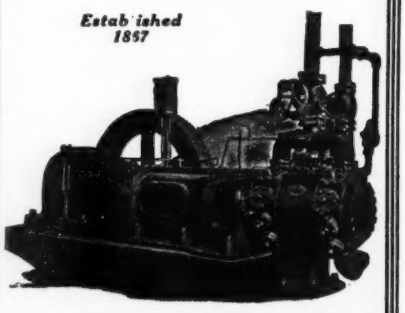

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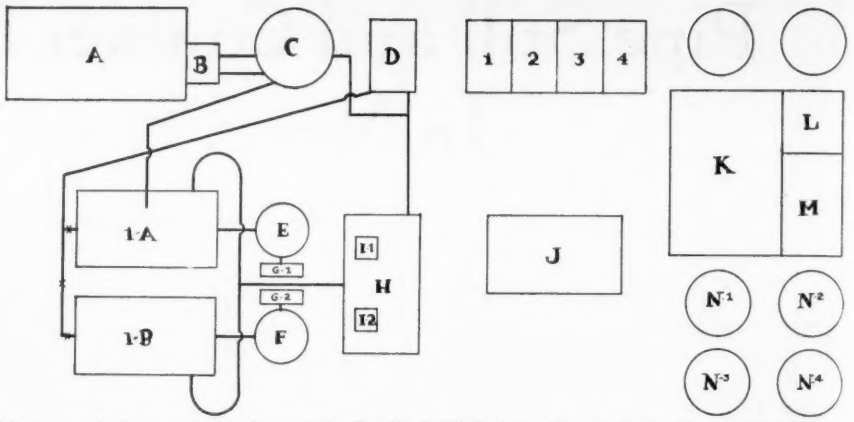


Diagrammatic layout of the plant of the Bradford Oil Refining Co. A is the Clay storage house, B the bucket conveyor, C the clay-oil mixing tank, D the pipe still, E and F the bubble towers, G-1 and G-2 the heat exchangers, H the pump house, 1-A and 1-B the separators, I-1 and I-2 the water cooled Southwestern condensers, J the tail house, K the refrigerating plant, L the Sweetland filter press, M the centrifuge room, N-1, 3 and 4 the chilling tanks, N-2 the heating and blending tank. 1. 2. 3 and 4 the fire stills. The two unmarked tanks above K and L are the dilution tanks.

of 35 per cent of stock to 65 per cent naphtha, when it is ready to go to the chilling tanks. There are three of these, each equipped with a mechanical stirrer, motor driven, which is operated about 15 minutes in each hour to prevent settling of the wax as the temperature is reduced.

The oil is slowly chilled down to about 10 degrees below 0 F. Then it is pumped into an elevated tank in the centrifuge house from which it feeds by gravity to the battery of 10 Sharples centrifugal machines which remove the wax. The wax free oil goes from the centrifuges to a battery of four fire stills in which the naptha is recovered and the wax oil pumped to finished oil storage. This product, which has No. 6 or No. 7 color, N. P. A., is known as blending stock. It was found that, when the temperature of the oil was reduced to about 150 F. in pumping from the separator to the dilution tank, it held its color better than when maintained at a higher temperature. A little loss of color is noted in heating up the oil in the fire stills to drive off the naptha.

Several troubles developed, Mr. Rose says, in putting the system into operation. In the first place, it was originally planned to introduce the clay into the oil just before it entered the pipe still. When this was tried trouble occurred. It was found that feeding the clay into the stream built up a high back pressure on the pumps. These operated at a normal pressure of 10 to 15 pounds but, when the clay was fed in, this immediately jumped to about 45 pounds making it difficult to keep the pumps from leaking.

IT WAS figured out that the reason for this was that the clay contained moisture and, when the clay-charged oil was immediately forced into the relatively constricted tubes of the pipe still, the resulting steam built up the pressure. So the point of application of the clay was changed, as before mentioned, so that it was fed into the oil after it left the pipe still and just before the stream entered the separator where there was a large enough space to accommodate the steam until it could find its outlet through the vapor line.

Another trouble was that the old steam stills that were used as separators began to leak before they had been in operation long. They were designed for temperatures considerably below 650 F. and their riveted seams would not stay tight at the higher operating temperature.

So it was necessary to rip off the lagging of the separators and go carefully over all the seams with an electric welder. Then the lagging was replaced.

IT WAS figured from the start that agitation of the oil in the separators to prevent cracking or burning would be desirable and installation of equipment to accomplish this led to another accident which might have been serious. Mr. Rose tells about the arrangement and the accident as follows.

Three stirring devices were installed in each of the separators, each driven by an individual motor. The shafts operating the stirrers were partly supported on step bearings in the bottom of the still and ran through universal joints supported by babbitted bearings on the underside of the top plate of the still.

The fact was overlooked that babbitt will melt at about 450 F. The babbitt did melt in the bearings of one of the universal joints and threw the whole weight of the mechanism on the step bearing on the still bottom and the end of the shaft bored a hole through the bottom plate.

One day there was a flash as the oil spouted through the hole and the fire was on.

There was nothing nearby to be seriously damaged by the blaze. The pumps were put to work and the oil drawn out of the separator. When the oil was all out, of course, the

fire was over. Since then the stirrers in the separators have been abandoned entirely and the agitation accomplished by steam, introduced into the separators through the ordinary perforated pipes in the bottom.

Mr. Rose says it takes two pounds of clay in the filtering operation to a gallon of finished No. 6 color blending stock. He believes he made the right decision in installing the plant he did. When it was decided to go into the manufacture of bright stocks, two alternatives were faced.

One was the conventional filter house with its percolating filters, a wax plant for handling the neutrals, clay handling equipment, a clay burning furnace and so on. The other was the installation of the plant described. On the distillation end of the plant the fuel economy is very high, and the equipment comparatively inexpensive, Mr. Rose says. And the equipment used in the present plant for filtering called for a considerably smaller investment than would have been necessary had he installed the conventional equipment, while his filtering costs are actually lower, Mr. Rose believes.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

25424.—**Lubricating Oil and greases,** Cairo, Egypt, agency.

25473.—**Asphalt for roads, Manila,** Philippine Islands, agency.

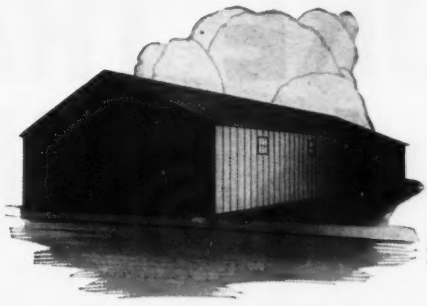
25645.—**Gasoline,** Oils, greases, Sao Paulo, Brazil, agency.

25698.—**Paraffin,** Santiago, Chile, agency.

25703.—**Lubricating oils, greases,** Traiguen, Chile, purchase.

Wolverine Opens Seventh Station

Lansing, Mich., June 2.—A new service station, known as Wolverine No. 7 was opened on May 7 by the Wolverine Oil Co. here. One half gallon of En-ar-co motor oil was given free to every customer who filled his tank with Wolverine gasoline on the opening day. A total of 5722 gallons of gasoline was sold, and 99¼ gallons of motor oil. Seventy gallons of motor oil were given away. There were 19 men on duty that day and 1340 customers were served, according to Bruce J. Maguire, manager.



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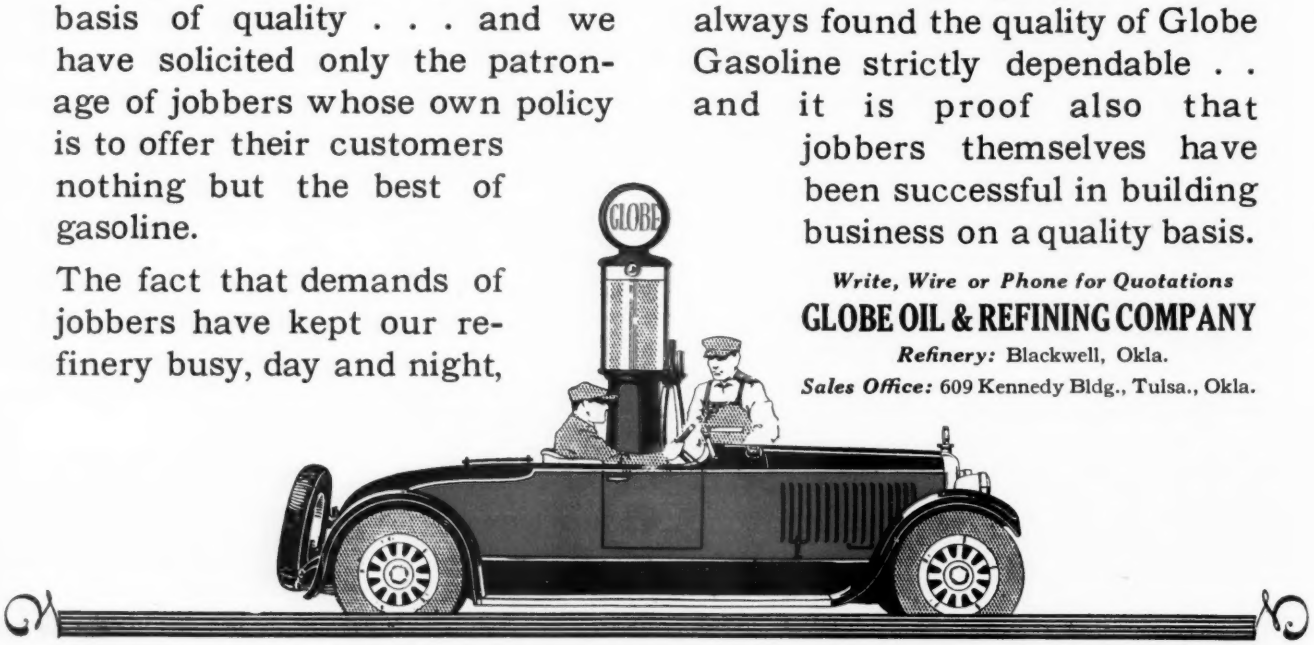

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Plant Operators Warned of New Fire Hazards

TULSA, June 2.

THE increasing sulfur content of gas being handled at natural gasoline plants presents an accident hazard due to the collection of pyrophoric substances in equipment, it was announced in the technical meetings held at the convention of the Association of Natural Gasoline Manufacturers here May 24-26.

When equipment is taken down so that air is admitted there are several instances of spontaneous combustion which have occurred thus far. Operators were warned to be on their guard to prevent a possible serious accident from this source.

George P. Bunn, assistant general superintendent for the Phillips Petroleum Co., told of an instance of the kind at his company's plant at Wewoka. A packed tower filled with steel shavings was being removed when it was observed that the walls were very hot. The tower was open at the top where a four-inch connecting line had been removed and flames were seen to be coming out of this opening, although there had been no fire in the vicinity and the tower was not connected with a gas line.

THE tower was filled with water, cooled down and the work of removal began again. While it was being taken down the fire started again and after being put out it flared up a third time in the supply yard and finally burned out. The only evidence inside the tower was a black scale on the walls of the tower and on the steel turnings.

Dr. E. C. R. Weisgerber of Los Angeles, told of his experiences in building thermite bombs for the British army to explain the cause of the spontaneous combustion. He said that a bomb as big as a man's fist made of oxide of iron, sulfur and aluminum would become a mass of molten metal when exposed to the air, with sufficient heat generated to burn through armor plate an inch thick. In case no aluminum were present in the equipment to react with iron rust and sulfur deposited from the gas, it was suggested that ferric oxide and sulfuric acid might cause the same results.

Samuel C. Carney of the Roxana Petroleum Corp., who acted as chairman of the operators' meeting suggested that any piece of equipment which has been handling sulfur content gas should be disconnected from the system with great care. He pointed out that combustion will not take place unless air is admitted and suggested that any piece of equipment might be kept filled with gas during a period of moving until it was out of a zone where fire might cause an accident of major proportions. The discussion of this fire hazard followed a paper by E. T. Ingalls of the Oklahoma Inspection Bureau, on fire prevention in the industry.

Group of seventeen members of the Chestnut & Smith Corp. and allied companies at the Sixth convention of the Association of Natural Gasoline Manufacturers. Front row, left to right: R. E. Beasley, H. F. Quinlan, John W. Crowe, G. C. Simpson, Roger Lentz, and Edward B. Hicks. Back row, left to right: L. W. Browne of the Fisher Governor Co., C. M. Edwards, F. G. Yonker, C. F. Smith, J. H. Boyle, J. E. B. Gibbons of the Victaulic Co., A. F. Wood, J. M. Holloway, M. F. Waters of the Smith Separator Co., William Smyers and Otto Peters.

THE general subject of accident prevention was handled in a paper by D. J. Wallace, director of the Petroleum Safety Council of the Mid-Continent Oil & Gas Association.

The paper on the portable plant by S. S. Smith, superintendent of the gasoline department of the Roxana Petroleum Corp., published in June 1 issue of NATIONAL PETROLEUM NEWS, brought out lively discussion which centered on some of the ill effects on the industry which have resulted from the installation of these plants. Criticism developed of the policy of some equipment manufacturers in selling portables to small producers with no experience in the gasoline business. It was stated that this has resulted in less to these small operators themselves and much annoyance to the established industry.

A number of the speakers at the convention congratulated the efficiency they have demonstrated in designing and building factory assembled plants of the 7,500 to 12,000 gallon type.

Matters on which the industry needs to direct its attention to obtain yet greater economy included: the use of pipe built specially for gas gathering systems rather than casing strong enough to be used in a 4,000-foot oil well, through a study of protective coverings for light pipe; and possible changes in compressor design to obtain more portability. One suggestion was that a compressor probably should be used which would represent a compromise between the light compressors now being used in the air lift and the very heavy compressors used in gasoline plants.

On the problem of internal company organization C. L. Swim of the insurance department of the Skelly Oil Co., read a paper entitled "Co-operation Between Plant and Office." The ever-present water problem at gasoline plants was covered by a paper by F. B. Good, The Texas Co. chemist at Breckinridge, Texas, which was published in the May 25 issue of NATIONAL PETROLEUM NEWS.

Strathroy, Ont.—S. Oakes & Son, which began jobbing petroleum products here in 1922, is now supplying gasoline and oils to 13 service stations and expects to add four additional service stations soon. The company handles largely Skelly Oil Co. gasoline.

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Changes in Natural Gasoline Specifications Voted

DIRECTORS of the Association of Natural Gasoline Manufacturers voted at their annual meeting in Tulsa to recommend two changes in official specifications for natural gasoline to the membership of the organization. One is in the nature of a correction and the second is in line with the association's long standing policy of improving the quality of the product offered by its members to consumers.

It was recommended that the corrosion test be made a requirement for all grades of natural gasoline coming within the official specifications of the organization. This would be by the copper strip method which requires that a clean copper strip shall not be discolored when submerged in the gasoline for three hours at 122 degrees F.

The second suggested change is in the gravity range of Grade C. In the past this product has had a gravity range of 80 to 90 degrees A. P. I. The upper limit is thus below the upper limit for Grade Double B which is generally considered a superior product. The proposed change would make the upper limit 92 A. P. I. gravity without any change in the recovery requirement.

The directors did not recommend that the Doctor test be made a requirement of natural gasoline. Both the specifications committee and the board contain some members who assert that the quality of natural gasoline will be lessened in some cases by treating to pass this test.

The board asked President Trower to appoint a committee to confer with the Western Petroleum Refiners Association, The American Society for Testing Materials and the Society of Automotive Engineers on the question of the Doctor test.

Changes recommended will not become effective until they are approved by the membership ot the association. A vote will be taken by mail and an effective date fixed if approval is given.

Progress Report

ANN ARBOR, Mich., June 2.—Complete results of the research of Michigan by the Association of Natural Gasoline Manufacturers up to the end of April this year are given in Engineering Research Bulletin No. 7 by Dr. Brown, recently published. The title of the 129-page book is "The Relation of Motor Fuel Characteristics to Engine Performance." Copies of the book may be obtained from the University at Ann Arbor, Mich., for $1.00 each.

Indications are that the research program of the association will be

Group of Skelly Oil Co. gasoline department men who attended the convention. Front row, left to right: E. M. Anderson, W. C. Klein, J. Vaiden, Ray Bullick and H. Brock. Second row: G. Geppelt, A. I. Sellars, A. H. Menuet, Emby Kaye, general superintendent; R. L. Huntington, Arthur Ayvazian, Ross Campbell and F. Green. Back row: N. A. Morbacher, L. Barrett, R. L. Allbritain, A. C. Holmes, R. O. Campbell and M. V. Enright.

carried on at the university for at least another year. Dr. Brown has been asked to prepare an outline of the work he would like to do next year for submission to the board of directors of the association at an early date. The board probably will meet late in June to make its decision on this outline.

Purchasers to Talk Standardization

TULSA, June 2.—At the convention of the National Association of Purchasing Agents, Grand Rapids, Mich., June 6 to 9, the Oil Buyers' Group was to discuss standardization work of the American Petroleum Institute, under leadership of G. A. Tompson, chairman of the group. Mr. Tompson, purchasing agent for the Empire Companies, Bartlesville, Okla., is also president of the Tulsa Purchasing Agents association.

Standardization developments from the Gulf Coast point of view were to be presented by A. M. Bowman, purchasing agent, Humble Oil & Refining Co., Houston. Mr. Bowman is national secretary of the A. P. I. committee on standardization of rigs and derricks. W. H. O'Connor, general purchasing agent, Marland Companies, Ponca City, will tell of standardization in the Mid-Continent field. The Pacific Coast will be represented by R. M. Ketchum, director of purchases, General Petroleum Corp., Los Angeles, while the North Texas fields will be covered by I. C. Jared, purchasing agent for the Sun Oil Co., Dallas.

Purpose of the Oil Buyers Group in discussing standardization is to create a more active participation by oil company purchasing agents in helping to bring the A. P. I. standard specifications into general use.

Two group sessions were to be held, one on Monday afternoon, June 6 and one Thursday morning, June 9. The papers will attempt to answer the following general questions:

What application has been made of the standard specifications for material set up by the American Petroleum Institute?

What can be done to promote more general use of these specifications?

What difficulties have been encountered in applying these specifications?

What may be done to overcome these difficulties?

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Reporters, Rebuffed by Operators, 'Resolve' on Own Account

NEW YORK, June 2.

THE future conduct of the oil industry was taken over here at an important meeting May 25 of newswriters (important and otherwise).

Fourteen resolutions were recorded (more may have been adopted) of far-reaching importance to the oil industry of New York, Seminole and Paden, Okla. Prohibition was slightly referred to by resolution but otherwise the meeting was dry.

The meeting was held in a private room at 26 Broadway kindly provided by the Standard of New Jersey, after the newspaper men had refused to sit in the Seminole operators' meeting held in the Board room at the same time. Their refusal to sit in the main meeting came within 30 minutes after they had been urged to "move on" and stop blocking the corridor.

The following resolution was immediately passed:

"Whereas (eight of 'em) . . . .

"Be It Therefore Resolved that we journalists and newspaper men who have jobs declare it to be the sense of this meeting that no oil operator will be allowed to attend and if Walter Teagle tries to get in we will promptly adjourn to some other part of the building."

The press was represented in force and the bank by Northrup Clarey. The writers started to gather about an hour before the operators' meeting. The big idea was to get into the board room, get comfortably seated and record the vote on whether they were to stay. It was good strategy, but it didn't work because private gendarmes patrolled the corridor. Very early it became apparent that the meeting was to be closed. Reinforcements kept arriving but they merely added to the congestion. A pleasant young gentleman who didn't look so pleased as time wore on kept urging the superior comforts of Mr. Clarey's office, two flights up, private elevator ready.

Dignitaries started to arrive. President Young and General Counsel Veasey, of the Carter, graced the gathering with their presence, keeping the railing between them and reporters. These oil gentlemen quipped a few quips and retired.

Col. Robert W. Stewart, of the Standard Oil Co. of Indiana, who was there to represent the location for its No. 1 the Dixie Oil Co. has made in the Seminole field, came in, affable, urbane and what not. He promised to vote to invite the newspaper men in, but there was a feeling that the chair might rule that he represented non-voting stock.

Ed Moore, of the Independent Oil & Gas Co. promised to do what he could, but it wasn't much—if he tried to do it. H. F. Sinclair squeezed his way through and seemed relieved when he escaped being trampled by the surging mob. George Dye, of the Wilcox, seemed to want to talk about the weather. E. W. Marland said he was glad to see us, but managed to refrain from cheering.

This public reception by the news writers was all over within a half hour and the secondary meeting was started. Several people acted as chairmen. All wanted to talk and, as fast as one would take the chair, he would relinquish it in favor of one who was for the moment silent. It looked like an old-time meeting in Tulsa to discuss the Marland bill. A fairly permanent secretary was found in the person of "Pete" Murphy, of the Wall Street Journal, who was chosen because he said he could write shorthand.

AFTER passing the resolution to exclude oil men, two hours were consumed in passing resolutions on the oil business. The gist, or high-points, of these were as follows:

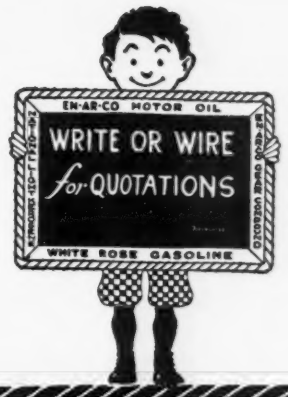
"I—It is the sense of this meeting (Note: this expression will be omitted from the rest of the resolutions but it must be read into all of them) that overproduction in the Seminole field may be stopped by drilling all future wells with portable rigs.

"2—The chief trouble with the oil business is caused by Prohibition. If operators could get the good old stuff, they would be mellow and agreeable. As it is they are always on edge and go into meetings prepared to resent whatever is said.

"3—All oil companies should get into the gas business, which we understand is quite profitable.

"4—The committee of Five Minus One which went to Washington last Monday is hereby thanked and should have its expenses refunded from the A. P. I. research fund, that being the proper heading for the venture.

"5—Congress is hereby urged to divest itself of all powers to make laws affecting the oil industry and



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THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude
National Headquarters
NATIONAL BLDG., CLEVELAND, O.

KELLOGG COMPRESSORS

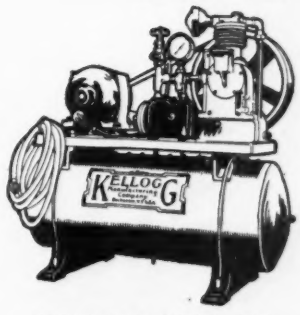
Speaking of Value!

You can't beat the BEARCAT

— a Kellogg Compressor built with typical Kellogg thoroughness, possessing the features usually found only in high-priced compressors and priced at a figure that puts a compressor within the reach of even the smallest filling station.

The Bearcat $149.20

Fully equipped. Automatic control. Patented self-cleaning check valve. Air cleaner and muffler. Air filter chamber. 25 ft. cord type hose. Ground Vanadium steel disc valves. Honed cylinders. Leak-proof rings.



KELLOGG MFG. CO.
Rochester, N. Y.

FORMULA
for a
Business Getting 100% Pennsylvania Motor Oil

First— A quantity of 450 Bright Stock (Sharples process) *refined at the Coraopolis plant of The Freedom Oil Works Co.*

Second— A quantity of 100% Pennsylvania Crude Neutrals *refined at the Freedom Plant of The Freedom Oil Works Co.*

Third— Blend by specialists of The Freedom Oil Works Company according to YOUR specifications, — and you can be sure that the specifications you get will be MINIMUM specifications.

This is the formula used for years by many of the country's leading jobbers. They recommend that you try it. Immediate shipment can be made in tank cars, compartment tank cars, barrels, or drums.

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less Neutral to blend to the ordinarily required specifications.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

repose that authority in the Federal Oil Conservation Board, the Department of Justice and the Hearst papers.

"6—Nothing helps the oil business so much as a good, old-fashioned shortage. It is hereby moved that somebody declare one for this fall or sooner.

"7—The overproduction of oil is general and is due as much to the Bradford field as anything else. Operators there are urged to take the water drive off the sand and to appoint an umpire with major league experience to see that it is done.

"8—The Prairie Oil & Gas Co. is thanked for holding back the Paden field of Oklahoma since about 1915, thereby several times averting overproduction and at the same time affording a fine example of unit operation.

"9—Oil company executives are urged to think wholesome thoughts and abandon the short side of the market for a few weeks.

"10—Company dividends should be maintained and even increased out of surplus, if any.

"11—President Calles, of Mexico, is commended as a true conservationalist.

"12—Suit should be brought by the legal committee of the Mid-Continent Oil & Gas Association, in any justice of the peace court having jurisdiction, to declare unconstitutional the law of supply and demand.

"13—Apologies are tendered to the Standard Oil Co. for blocking the corridor and using up so much good air.

"14—Whereas, the newspaper industry faces a general overproduction of words, a committee is appointed to make a survey to see what parts of speech can be shut down during the crisis and to determine whether the hot-air lift should be taken off. This committee is also empowered to transact any other business it may think up."

A row having broken out in one corner over whether Babe Ruth is a greater ball player than Frank Phillips is a financier, it was voted to adjourn and try to imagine something to say about the operators' meeting, as it was about press time. The only one who was not distressed about making the final edition was H. S. Reavis, publisher of the Petroleum Register, who wasn't due to lock the forms until about next Labor Day.

TRIPLEX
TANK WAGON HOSE

Built for the hardest kind of service ~ stronger and heavier metal rubber and fabric, husky leak-proof couplings ~ not merely a pump hose built to a larger diameter

MEMPHIS: 245 Monroe Ave.
JACKSONVILLE: Dixie Culvert & Co.
ATLANTA: P. O. Box 1343
RICHMOND: P. O. Box 514
BROOKLYN: 236 Tillary St.
BOSTON: 142 Berkeley St.
PITTSBURGH: 341 Second Ave.
CLEVELAND: 1302 Ontario St., N.
CINCINNATI: 450 East Pearl St.
DETROIT: 5459 Grand River Ave.
ST. LOUIS: 1621 Pine Street
KANSAS CITY: 13th Street and Eastern Ave.

CHICAGO: 1213 West Washington Blvd.
SAN ANTONIO: 1401 South Flores Street
HOUSTON: 700 N. San Jacinto St.
EL PASO: 1020 East Overland St.

METAL HOSE & TUBING CO. INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

NEW ORLEANS: 205 So. Peters St.
MINNEAPOLIS: 900 Sixth Ave., S. E.
DENVER: 4800 York Street
SAN FRANCISCO: 873 Mills Building
LOS ANGELES: 1625 South Hill Street
SEATTLE: 67 Columbia St.
OMAHA: 13th & Willis Sts.
TORONTO, CAN.: Dunlop Tire & Rubber Goods Co., Ltd.
LONDON, ENG.: J. Bazley-White, 3 Love-Lane, Eastcheap, E. C. 3

SELL MORE OIL
from
BOE BOTTLES

They make a beautiful display.
They are designed on the right principle.
They just fit the hand.

BOE SERVICE SETS
and
DISPLAY RACKS
Speed Up Service

Write for Literature
BOE MFG. CO.
Manufacturers of
Oil Pumps, Grease Pumps, Grease Kits, Grease Guns, Lubricating Units
Minneapolis, Minn.

Tests On Cylinder Stocks Differ Widely

CLEVELAND, June 2.

A W. SCOTT, Empire Oil Works, Oil City, Pa., trustee in charge of the department of standards and tests of the National Petroleum Association, is continuing and broadening his campaign to bring about better testing methods and more nearly uniform results in the laboratories of the eastern refineries.

He recently sent out samples of the same cylinder stock to a number of laboratories and to the Bureau of Standards for testing. The refineries receiving the samples are in the Bradford, Pittsburgh-Butler, Ohio-West Virginia and Philadelphia groups. Thirty-one of the refineries reported the result of their tests. Concerning the results, Mr. Scott said:

"It is interesting to note the very wide range in fire tests, viscosity and pour test within each group and taking the groups as a whole. Each sample tested was taken from the same drum.

"We believe it is well worth while for the refinery executives to take time enough to go over this report and see if their laboratories are checking pretty closely with the others and with the Bureau of Standards. This report should then be passed along promptly to the laboratory for inspection."

The divergence in results of the tests is shown in the following tables:

Results from Bureau of Standards

Gravity	Flash	Fire	Visc. @ 210	Pour	Carbon Residue	Precip.
.....	550	620	145	50	1.77	trace

Results from Bradford Group

Gravity	Flash	Fire	Visc. @ 210	Pour	Carbon Residue	Precip.
26.8	545	620	144	*	2.04%	.....
26.9	545	630	147	30	1.97%	.....
26.9	545	620	148	40	1.75%	.....
26.3	545	615	145	20**	3.15%	.....
26.8	545	605	149½	30	1.95%	.....
26.8	545	605	141	20	.....	.....

*Pour Test 30 (Oil at 70)—Pour Test 50 (A. S. T. M. D97-23T)—Pour Test 55 (A. S. T. M. D97-25T)—**(A. S. T. M. D97-23T)

Results from Philadelphia Group

Gravity	Flash	Fire	Visc. @ 210	Pour	Carbon Residue	Precip.
26.9	555	625	146	60	.....	.....
			142			
26.8	555	620	144½	30	.....	.....
26.8	555	625	147	55*	2.08	.....
				40**	2.10	.....
				30***		.....
27.0	555	625	145	55*	1.75	.....
				55**		.....
				20***		.....
26.5	555	625	144	55*	.....	.....
				50**		.....
				20***		.....
26.6	550	630	146	45*	1.68	.....
				45**		.....
				15***		.....
26.7	550	630	148	45*	1.98	.....
				50**	1.96	.....
				25***		.....

*Heated to 90. **Heated to 115. ***Heated to 220.

Results from Pittsburgh-Butler Group

Gravity	Flash	Fire	Visc. @ 210	Pour	Carbon Residue	Precip.
26.6	555	625	146	25	.....	.....
26.8	525	610	146	40	1.12	.....
26.6	555	635	143	25	.....	.....
26.6	545	620	143	20	.....	.....
26.9	550	625	144	25	.....	.....
26.8	550	620	143	25	.....	.....

Results from Ohio-West Virginia Group

Gravity	Flash	Fire	Visc. @ 210	Pour	Carbon Residue	Precip.
26.6	545	620	145/146	Max. 50	1.68	.....
				Min. 20		
26.8	550	630	143	Max. 55	1.78	.....
				Min. 20		
26.7	555	635	148.7	Max. 50	1.74	.....
				Min. 20		
26.4	555	620	146	40	1.60	.....
27.2	560	640	150	45	1.50	.....
26.7	565	640	147	40	2.10	.....
27.0	545	615	146	35	2.19	.....
				30		
26.7	555	630	145	35	.....	.....
26.6	560	625	144.4	20	1.60	.....
26.6	565	625	145	15	1.91	.....
26.6	550	625	146	40	1.7	.....
27	555	625	141	25	.....	.....

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

Andrews-Bradshaw Co., Pittsburgh, manufacturers of the Tracyfier and other steam specialties, announce that R. N. Robertson and A. L. Menzin have joined the company, the former as chief engineer and the latter as director of research. Mr. Robertson came from the American Smelting & Refining Co. where his work comprised all branches of power plant engineering. He is a Cornell man, class of 1905. Mr. Menzin has had wide designing, construction and research experience on steam power plant equipment, as chief engineer of the Tracy Engineering Co. and before that, consulting engineer with the Edge Moor Iron Co., manufacturers of Edge Moor boilers. He is a graduate of the University of California, class of 1907.

* * *

Max B. Miller Co. Inc., 501 Fifth av., New York, has recently put out a handsome booklet well illustrated, entitled "The Process of Contact Filtration." Various applications of contact filtration for different purposes and for different stocks are given together with a list of the patents covering phases of contact filtration under which the company is licensing its use.

* * *

E. E. Dorrester has been made manager of the Tulsa offices of C. F. Braun & Co., manufacturers of natural gasoline plant equipment, to succeed A. W. Burkett who resigned.

The company also has announced the appointment of H. S. Schneider as general sales manager. His offices are at Alhambra, Cal., headquarters of the company. Mr. Schneider formerly was manager of sales in the Pacific Coast district.

* * *

Williams Oil-O-Matic Heating Corp., Bloomington, Ill., is sending out invitations to those interested to attend the third international Oil-O-Matic convention to be held in Bloomington June 6 and 7. At the convention in 1926 nearly 2000 dealers, salesmen and service men attended, the announcement says.

* * *

Dean Hill Pump Co., Anderson, Ind., has put out Bulletin No. 403 describing its ball-bearing double suction centrifugal pumps.

Lincoln Electric Co., Cleveland, O., announces the appointment of the Wade Engineering Co., Los Angeles, as distributors of Lincoln products in California. This company maintains a branch at Oakland, Cal., both main office and branches carrying complete stocks. The Los Angeles branch is in charge of Henry N. Wade who is president of the Wade company. H. T. Lintott is in charge of the Oakland branch. The Wade Engineering Co. handles Linc-Weld motors for the entire state and Stable-Arc welders in northern and central California. A. H. Peir Co. continues to handle Stable-Arc welders in southern California.

* * *

C. J. Tagliabue Manufacturing Co., Brooklyn, New York, has put out The Tag Oil Refining Bulletin, No. 918 B. The catalog covers the application of Tag instruments to oil refineries and natural gasoline plants.

* * *

Davenport Locomotive Works, Davenport, Ia., has put out a leaflet describing its industrial gasoline-electric locomotive. The locomotive is equipped with a gasoline engine driving an electric generator. Each wheel is a driver, being equipped with an individual motor. It is stated that the Davenport gas-electric locomotive will start a heavier train and will handle more ton-miles per day in switching service than any steam or gasoline locomotive of the same weight.

* * *

Howard Winton, general branch manager of the Heil Co., Milwaukee, was elected president of the Milwaukee Association of Industrial Advertisers at the annual business meeting of the association May 16. Mr. Winton served as advertising manager of the Heil Co. for eight years, and was recently promoted to his new position, according to R. E. Parmenter, advertising manager.

* * *

The Newark Wire Cloth Co., 351 Verona av., Newark, N. J., has put out catalog No. 26 which supersedes its catalog No. 25. The newest development shown in the catalog is gasketed metallic filter cloth which the company is now manufacturing. The gasketed filter cloth is said to be in successful use in several types of flush plate and filter presses. Several pages in the back of the catalog contain tables such as are needed by users of wire cloth and the book is illustrated with photographs.

STENCILS
BRUSHES INKS
RUBBER STAMPS
& MARKING DEVICES

IMPRESSION OF OIL DRUM STENCIL

-⊡-

Best Stamp & Mfg. Company
812 Delaware St.
Kansas City, Mo.

Patent Pending

MORE OIL SALES

With oil displayed in this Rack holding 24 Dispensers. Has hinged caps covering each spout. All Bottle trays removable. The Neatest and Best Rack on the market.

Send for Particulars

WM. Neil & Co.
617 W. Division St. Chicago, Ill.

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

IF YOU chance to be traveling across the mosquito-covered plains of west Texas and see an individual loaded down with a pack resembling a golf bag, don't jump too quickly to the obvious conclusion. He may be carrying a magnatometer, which instrument is rapidly coming into use for sub-surface structural mapping.

The experience of the major oil companies in the Gulf Coastal districts, where a number of submerged salt domes were discovered by means of the torsion balance and the seismograph, convinced them that scientific instruments have a well established place in the industry. Consequently, the scientists were called upon to construct instruments to operate under various geological conditions in different parts of the country. In west Texas, the magnatometer has proved its capacity to locate various underground structural conditions which were verified by drilling. The instrument, which may be carried anywhere and which is set up on a tripod, measures the relative depth of the denser rocks underground on a magnetic principle.

Among others, these instruments are being used in west Texas by the Gulf, Humble and Texas Pacific Companies.

* * *

CARL CLEMMONS, assistant superintendent of production of the Gulf Production Co., in Gulf Coastal territory, is taking his vacation in the New England states and Canada. He loaded his car on a tanker about the first of June, bound for New York. There he was to begin a three weeks trip, accompanied by Mrs. Clemmons.

* * *

W C. KEELY, representative of the Snowden-McSweeney Co., at Big Creek, Fort Bend county, Texas, where his principals are half owners of a Gulf Coastal salt dome, is back on the job again after a trip to Fort Worth headquarters. While in North Texas, Mr. Kelly made an inspection trip to Breckenridge, where the company has extensive holdings.

* * *

ALEXANDER DEUSSEN, Gulf Coastal vice president of Marland Oil Co. of Texas, is recovering from a recent illness which kept him away from Houston headquarters several weeks. After leaving the hospital in Fort Worth he spent his convalescing period at his farm in Denton county.

C. E. MORRIS

IF THIS page were read only in Louisiana and Arkansas there would be no excuse for printing the accompanying picture of C. E. (Red) Morris. He is no less an institution in the two states mentioned than the oil fields within their boundaries.

Morris scouts the broadly termed Shreveport district for the Gulf Refining Co. of Louisiana; and, except for a brief term in the Ranger territory eight or nine years ago, he has always served the Mellon oil interests in Louisiana and Arkansas.

There isn't much else to be said about "Red" under the circumstances, except perhaps that he generally gets his feet on the pavement only in his home town of Shreveport. The rest of the time he spends in the piney-woods territory where oil is known or is suspected of existing.

* * *

JOHN CASE and A. A. Murrell of the New York offices of the Vacuum Oil Co. recently made a tour of the west Texas fields, accompanied by W. B. Sutton of Houston, manager of the company's land department in the southwest.

* * *

WILLIAM E. WRATHER, consulting geologist of Dallas, who takes, occasionally, time off from research problems affecting the petroleum industry to build up his library, reports making a rare find on his trip to Roumania last year. When in Italy, he purchased for a nominal sum a copy of "Geology Pratique de la Louisiane," by R. Thomassy (Paris, 1860.)

* * *

PAUL WEAVER, formerly of the Mexican Eagle Oil Co., Ltd., at Tampico, but more recently engaged in geological and petroleum engineering work for Gulf Production Co., with Houston headquarters, has found the airplane utilitarian and practical for studying suspected oil territory. He uses it for sketching and mapping the terrain in reconnaisance work.

* * *

WALLACE E. PRATT, director of Humble Oil & Refining Co., having general supervision of land and geological operations, recently delivered a course of three lectures before the geological class of the University of Texas at Austin. He pointed out especially the opportunities in the petroleum industry for graduate geologists with enough law schooling to fit them for land work or those who would fit themselves for petroleum engineering jobs through actual field service. Either way, he pointed out in effect, geological graduates would equip themselves with the background which permits their eventually becoming executives. He stressed the many examples apparent in the last few years of similar individual successes.

* * *

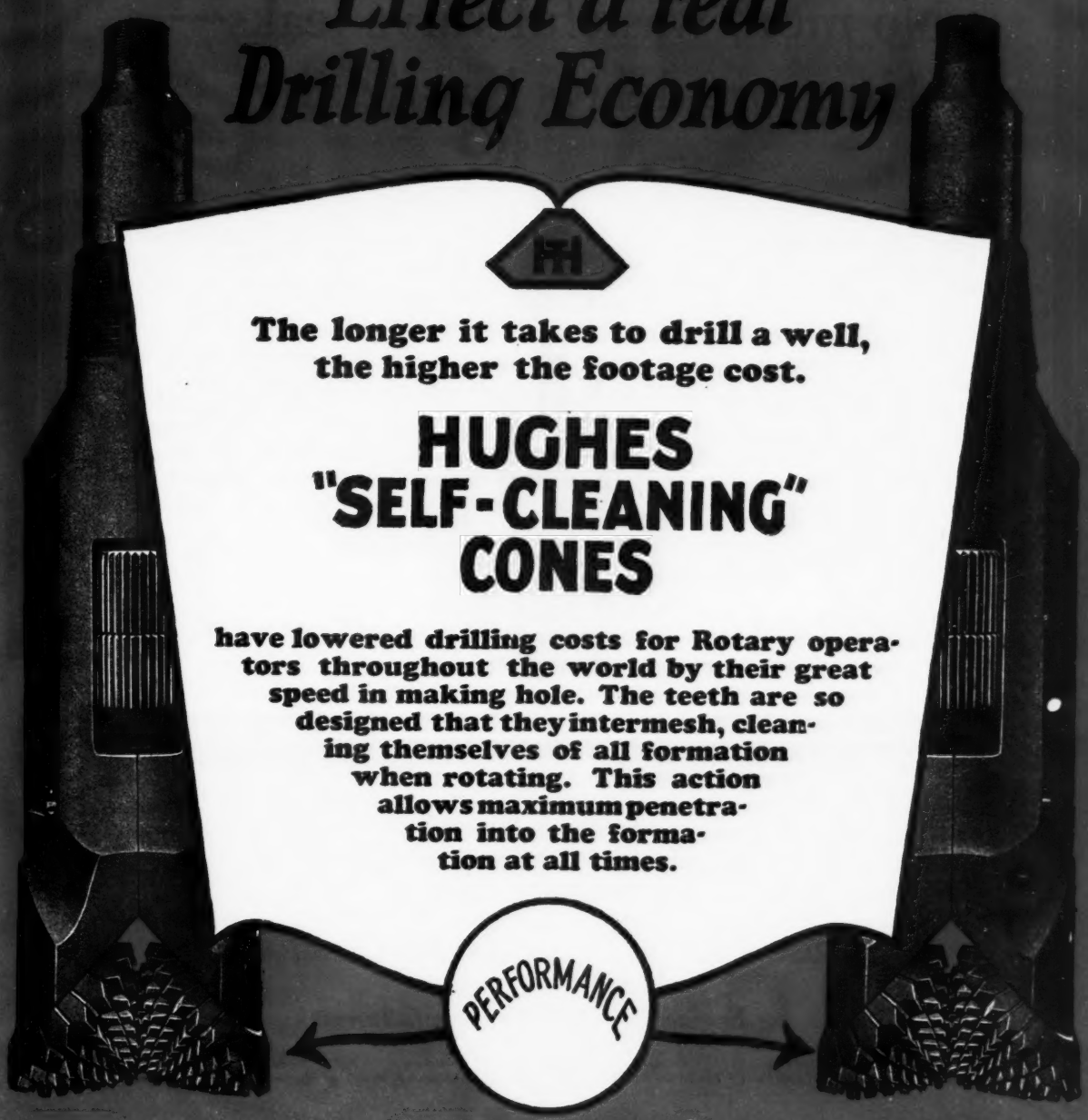
ALFRED MULLER, who operates a jobbing business at San Antonio as the Clover Leaf Oil Co., likes to recall that he was, at the age of 13, the youngest clearing house clerk in Texas. So far as he knows the record still stands.

Muller's work earned him the approval of his superiors, but at a recent reunion in Galveston it was laughingly recalled the banking management had to ask him to "put on long pants" in order that the institution's dignity might be preserved.

* * *

EARL WHITCOMB, who scouts the San Angelo district for the California Co., Rocky Mountain and Texas subsidiary of the Standard Oil Co. of California, is a man of versatility. For years he was advertising manager of the Oliver Chill Plow Works, but resigned to enter the oil business. After a period of field work, Whitcomb acquired an interest in a contracting firm owning two rotary outfits and a string of cable tools. When reverses hit the firm he took up scouting.

When you more than DOUBLE the FOOTAGE per TOUR you Effect a real Drilling Economy



The longer it takes to drill a well, the higher the footage cost.

HUGHES "SELF-CLEANING" CONES

have lowered drilling costs for Rotary operators throughout the world by their great speed in making hole. The teeth are so designed that they intermesh, cleaning themselves of all formation when rotating. This action allows maximum penetration into the formation at all times.

PERFORMANCE

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

MAIN OFFICE AND PLANT
HOUSTON, TEXAS

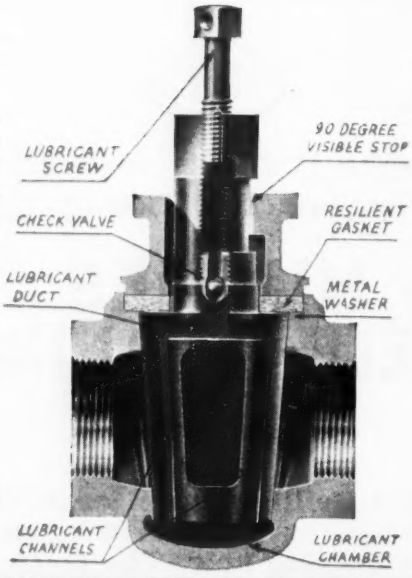
Export Office
New York City, N.Y.

MERCO

No more wasteful valve leaks—
No more delays by sticking

In the Oil and Gas Industry the lubricated plug valve was unknown a few years ago. Leaks had to be tolerated. Stuck valves were more the rule than the exception. Then Merco Nordstrom Plug Valves were introduced and valve service was revolutionized.

Won't Leak



The principal of *lubricant under pressure* —to guard the plug against sticking, corroding and to prevent leaks—has been enthusiastically accepted. Today these valves are in universal service in gas plants, gasoline plants, oil refineries — everywhere.

Won't Stick

Merco Engineers have compounded special Merco Lubricants for different operating services. Our Catalog gives full information. Ask for it.

MERCO NORDSTROM VALVE COMPANY

SUBSIDIARY OF THE MERRILL COMPANY

Engineers— MERCO *Manufacturers*

San Francisco 121 Second Street | New York 110 W. 40th Street | Chicago Peoples Gas Building | Houston 613 Washington Avenue | Cleveland 325 Engineers Building | Agencies in Principal Cities

Merco Nordstrom PLUG VALVES

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Making Gasoline to Fit the Climate

IT LOOKS as if refiners in the near future may be making gasoline to fit the climate where it is to be used. Dr. George Granger Brown of the University of Michigan, speaking before the Association of Natural Gasoline Manufacturers in Tulsa the other day, brought up the point again. In his talk, published in the June 1 issue of NATIONAL PETROLEUM NEWS, Dr. Brown gave specifications for the ideal gasoline to be used at four average temperatures, very cold, cold, warm and hot.

Dr. Cragoe of the Bureau of Standards presented a similar idea in a paper at another meeting in Tulsa a few months ago. Dr. Cragoe suggested that the average seasonal temperature of various sections of the country, could be learned from the U. S. weather bureau. The ideal characteristics of a motor fuel to be used at such temperatures being known, why make a gasoline to give the utmost in results at that temperature?

It seems a logical idea. For fall and winter use in the northwest, a gasoline having good "partial volatility," as Dr. Brown expresses it, is needed to give satisfactory operation. That is, a fairly low initial, but more important, a low boiling range up to the 20 per cent point. Such a gasoline, if made from the crude, represents a relatively small yield.

Why sell such a gasoline to be shipped into Georgia, Florida, and the other southern states. In other words, why hold down the yield from the crude in order to make a gasoline of higher volatility than cars in a particular locality need for satisfactory performance.

Of course, there is a limit to which this could be carried. However, it seems uneconomical, in the light of facts Dr. Brown and other investigators are constantly bringing out, to make too good a gasoline when a satisfactory motor fuel could be made that would give an additional yield of two or three per cent from the crude.

With modern bubble towers, which can be regulated to give any reasonable desired boiling range of gasoline, seems conceivable that a refiner might run off 50 cars of gasoline of a certain boiling range for shipment into the northwest, then change his tower temperature control and run off 50 cars for shipment to Louisiana.

The Specifications Pest

WE THINK that Dr. M. R. Schmidt of the Standard Oil Co. of Indiana did a service to the refiner when he told the automotive engineers at a recent meeting in plain words how much trouble is made for the oil industry by the self-appointed specifications writers. These are often in positions of authority and base the requirements for the lubricating oil they buy on their own notions or hunches, which many times are not founded on scientific fact.

As Dr. Schmidt was careful to point out, these freak specifications, some of which are impossible of attainment, not only bother the refiner and cause him needless expense but they fail to protect the buyer because it is frequently impossible for the most skilled analyst to determine whether the specifications have been lived up to or not.

The refiner undoubtedly knows more about how to make good lubricating oil than the man who buys and uses the oil. And he frequently knows quite as much as the buyer and user as to the requirements of the particular machine for which the oil is designed, for the refiners nowadays who make lubricating oil have laboratories and staffs for testing and doing research work that are at least the equal of the laboratories and staffs that can be applied to lubricating problems by any industry buying the oil.

Anglo-Persian Fires Up Another Plant

KING FEISAL of Iraq presided over the ceremonies of starting up a new refinery recently completed at Alwand, Iraq, by the Khanaqin Oil Co., Ltd., a subsidiary of the Anglo Persian Oil Co., according to *Oil News*, published in London. The refinery started operations May 7, according to this article, running on crude from the Anglo-Persian's production in Iraq. It is expected a pipe line will soon be built from the Iraq fields to the Mediterranean.

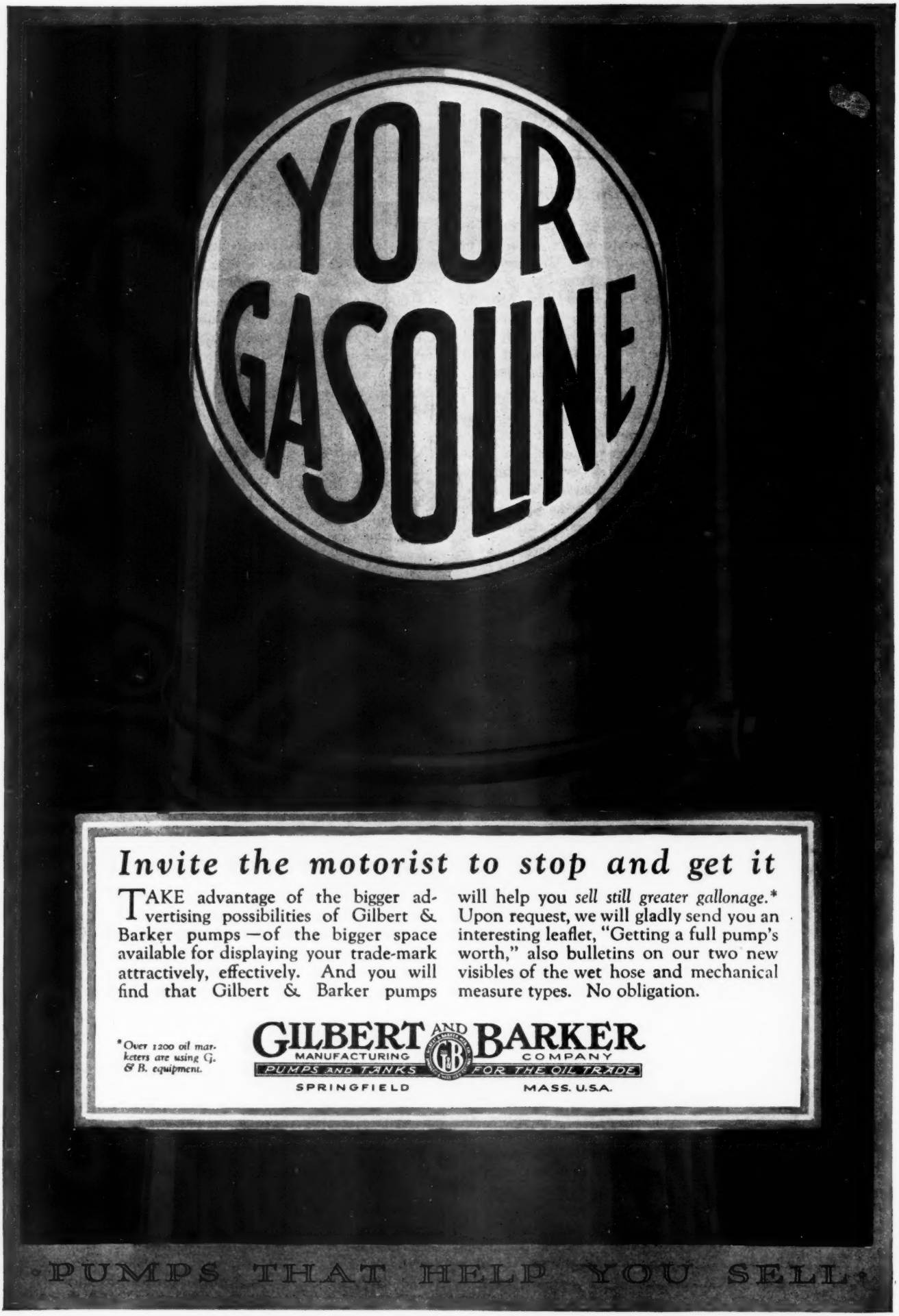
The same paper carries another article that shows the rapid increase in volume of crude oil imported into England to be refined there. It is stated that imports of crude into England the first four months of 1927 amounted to 5,682,800 barrels as compared with 4,136,238 barrels in the same period of 1926. About 3,700,000 barrels came from Persia and the rest from other sources in the first four months of 1927, while in the corresponding period last year imports from Persia were about 2,800,000 barrels and the rest from other sources.

Most of this crude is being refined and marketed by the Anglo-Persian which seems to be one of the fastest growing of the big oil companies.

A Pipe Setting Free From Its Setting

THE May issue of *Heat Engineering*, a periodical put out by the Power Specialty Co., shows a photograph of a Foster pipe still under construction at a Pennsylvania refinery, for handling clay-treated lubricating oil, in which the heating tubes and heating surfaces are entirely supported by steel work, being entirely free from the brickwork of the setting. All the expansion and contraction are taken care of in the steel work itself. Likewise, expansion joints are installed in the brickwork so that it can expand and contract without loosening the joints of the heating elements.

It has been found that, in installing shell stills, it is good practice to suspend them on structural steel pillars and then brick in around them so that the contraction of the metal would not force the brickwork apart, leading to air leaks with consequent excess air and waste of fuel in the furnace. Old practice was to suspend the still on the top of the brick setting.



Invite the motorist to stop and get it

TAKE advantage of the bigger advertising possibilities of Gilbert & Barker pumps—of the bigger space available for displaying your trade-mark attractively, effectively. And you will find that Gilbert & Barker pumps will help you *sell still greater gallonage.** Upon request, we will gladly send you an interesting leaflet, "Getting a full pump's worth," also bulletins on our two new visibles of the wet hose and mechanical measure types. No obligation.

*Over 1200 oil marketers are using G. & B. equipment.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

PUMPS THAT HELP YOU SELL

Mayhall Company to Make Tank Car Gauges

Staff Special

Tulsa, May 31.—C. L. Mayhall, former general manager of the Imperial Refining Co., and John M. Mayhall have organized the Standard Liquid Testing Devices, Inc., to manufacture and sell the Mayhall gauge, a device for measuring and testing the contents of tank cars. General offices of the company are at 735 Kennedy Bldg., Tulsa. The factory is in Milwaukee.

The gauge consists of a metal staff to which are attached three sampling jars, and devices measuring outage and water in the bottom of the car.

The sampling jars will collect samples at the bottom, middle and top of the car. Their contents represents an average sample. Filling the jars is accomplished by a control rod which extends to the top of the staff which protrudes from the top of the car. Within each cup is a thermometer which does not come into contact with the contents of the car except the liquid admitted into the cup.

At the bottom of the staff is attached water searcher paper which detects and measures water in the bottom.

An innage and outage measuring device consists of a movable arm which acts as a shell level finder and a glass tell gauge protected by a perforated brass tube. To measure the contents of a tank car the staff is lowered through the dome until it rests vertically in the car. The shell finder arm is pulled up until it touches the inside of the tank car. The control rod is turned to allow liquid to rise in the tell gauge through a valve at the bottom. The difference between the liquid level and the shell finder on a graduated rule shows the amount of outage or innage.

Mr. Mayhall says the gauge will enable consignors and consignees to throw away their string, tincan, bottle and rule and will prevent annoying disputes between sellers and buyers.

Deane Gill, director and in charge of land offices at Forth Worth, Tex., for the Manhattan Oil Co., is another member of the industry who finds the airplane faster and more satisfactory in his work of securing land for drilling. He recently flew from Fort Worth to Kansas City in three hours and 50 minutes, according to R. E. Thompson, advertising manager for the company.

A Master Portable Elevator

Illustrated above is the Lewis-Shepard 500 lb. portable elevator, a tough machine built for rough use and long life. Ask us how it can help YOUR business.

THERE is no need to pay more if your loads are 500 lbs. or less. No portable elevator is more efficient on loads of this capacity. The 500 lb. Stacker embodies the essential and superior features of our Worm Drive Stackers.

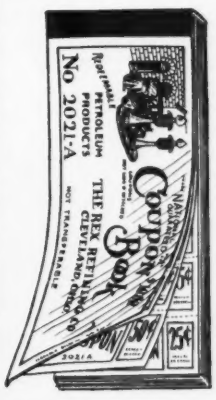
Write, now, for our latest catalog and the new "Jacklift and Stacker practice," just off the press.

LEWIS-SHEPARD COMPANY

143 Walnut St., Watertown Station, Boston, Mass.

Representatives in Over 30 Principal Cities

LEWIS-SHEPARD



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are made two inches wide, conveniently fitting in the vest pocket.

Contain 25 cents in 1-cent coupons, $1 in 5-cent, $3.75 in 25-cent and $5 in 50-cent coupons—a total of $10. Each denomination is a different color, making handling of amounts as easy as coin.

Write us for circular

NATIONAL CHECKING CO.

271 Chestnut St. St. Paul, Minn.

Bell Rings for Each Gallon

Automatic Piston Return

A Thoroughly Fine, Rugged, Easy-working Pump

Dials on Front and Back, Glass Covered

No Train of Gears to Rattle and Wear

Fast — 12 Turns for Five Gallons

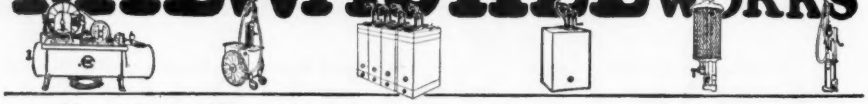
Large Output and Popular Priced

Send today for complete Catalog of Visibles, Compressors, etc.

MILWAUKEE TANK WORKS

MILWAUKEE, WISCONSIN
NEW YORK — Woolworth Bldg.

MILWAUKEE TANK WORKS



F O U N D E D 1 9 1 1

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 807 Caxton Bldg., Cleveland, Ohio

New Publications

The identification of oil field waters by chemical analysis is discussed in Bureau of Mines technical paper 404, by C. E. Reistle, Jr., petroleum engineer with the bureau at Laramie, Wyo.

This paper brings out the importance of analyzing underground waters encountered in oil drilling, and determining the source from which these waters come. It is frequently possible, the paper points out, to prevent other waters from entering the productive strata, although it is impossible to eliminate the "edge water" that occurs naturally in the oil sand. Because water decreases the productiveness of an oil sand, increases lifting costs, and in many wells forms emulsions with the oil, a study of water identification methods has been made by Mr. Reistle, in an effort to help the producer lessen water troubles.

A copy of the paper may be had for 5 cents by addressing the Superintendent of Documents, Washington, D. C.

* * *

The 1927 Petroleum Register, containing 600 pages of important facts about oil companies throughout the world, is off the press.

Listed and indexed are oil producing companies, refiners, jobbers and marketers, natural gasoline manufacturers, pipe line companies, compounders, grease manufacturers, drilling contractors, oil equipment and supply companies. The information which is furnished about the oil companies includes names of officers, capital, location of properties, digest of latest financial reports, etc.

The book also includes maps of the principal producing and prospective oil fields, and statistics on production, consumption, imports and exports, and other details about petroleum products.

Price of the book is $10 per copy, delivered. It may be had by addressing National Petroleum News, 812 Huron Rd., Cleveland, O.

* * *

Battelle Publishing Co., 317 Central av., Los Angeles, has just brought out a new manual for the tire trade designed to help in the merchandising of tire and vulcanizing service at super service stations. The book sells for $3.

GOSHEN, IND.—The Abshire Oil Co., which has been a member of the Independent Oil Men of America for the past year, has just adopted "Red Hat" brand of gasoline. The company plans to advertise "Red Hat" extensively and will discontinue its old trade brand of "Grey Goose", according to H. B. Miller, secretary-treasurer.

New Stations Built or Being Built

Burlington, Vt.—M. D. Perelman, oil marketer here, is building bulk and service station at Swanton, Vt.

Macon, Mo.—Fowler Oil Co. will build bulk and service station here.

Jacksonville, Tex.—Gulf Refining Co. will build filling station.

Morrillton, Ark.—Continental Oil Co. is building service station.

Louisville, Ky.—States Oil Co. is building service station here and planned to begin construction of another station May 30.

Akron, O.—Duncan Oil Co. has purchased property here for filling station.

Portsmouth, O.—D. D. Coburn will build filling station.

Portsmouth, O.—Portsmouth Oil Co. will build service station.

Sunbury, O.—George Pugh and Otis K. Baker, of Radnor, O., are completing filling station.

Zanesville, O.—Pure Oil Co. is completing service station.

Canton, O.—J. W. Walter, 1416 14th St., will erect filling station.

Waterloo, Ind.—Day Bros., of Edgerton, O., are building filling station here.

Stevens Point, Wis.—Victor Nelson will build service station.

Elwood, Neb.—Standard Oil Co. of Nebraska plan to build filling station.

Leavenworth, Kan.—Barnsdall Refining Co. is building filling station.

Kingsville, Tex.—L. T. Cannon is building filling station and garage.

Cherokee, Okla.—D. E. York will build filling station, to be leased by Pierce Petroleum Corp., St. Louis, Mo.

Horton, Kan.—Two filling stations are being completed here by the Ploco Oil Co., and one by R. D. Bartlow.

Sublette, Kan.—Andy Henage, owner of the H. & H. Filling Station, will erect building which will include filling station.

Lawrence, Kan.—Long Oil Co. plans filling station.

Cushing, Okla.—J. C. McGee building filling station.

Floydada, Tex.—Marland Refining Co. will build filling station here.

Beaumont, Tex.—Magnolia Petroleum Co. will erect filling station.

Knox City, Tex.—J. H. McLain is completing service station.

Alto, Tex.—J. H. Pearman is building two filling stations.

Cherokee, Ia.—Robert Lauer building service station.

Beloit, Wis.—Standard Oil Co. of Indiana is building bulk station.

Logan, Utah—Blue Light Gas & Oil Co. is building bulk and service station at Downey, Ida., and service station at Wellsville, Utah. The company will then operate eight service stations from Wellsville to Downey, 70 miles on the Yellowstone highway, according to A. G. Olofson, president and general manager. Two tanks of 15,000 gallons capacity each, are being installed at the Downey bulk plant.

Muncie, Ind.—William Oil Co. is completing two service stations here, and one in Anderson, Ind. Marland products will be handled.

Warsaw, Ind.—Polk Oil Co. is building service station and bulk storage at Wabash, Ind. Marland products will be handled.

Lime Springs, Ia.—Schlacht Bros. Oil Co. purchased property for filling station.

Kimbell, Neb.—Ralph Brown completing filling station.

McCook, Neb.—Continental Oil Co. is building service station.

Bowling Green, Mo.—Marland Oil Co. will build service station.

Sand Springs, Okla.—Tom Lambert is building filling station.

Eufaula, Okla.—Pierce Oil Corp. will build filling station.

Topeka, Kan.—Central States Oil Co. will erect service station.

Marshland, Wis.—Rhymer Oil Co. will build bulk and service station.

Ironwood, Mich.—Schubert Oil Co., successor to Heinricks Oil Co. is completing service station.

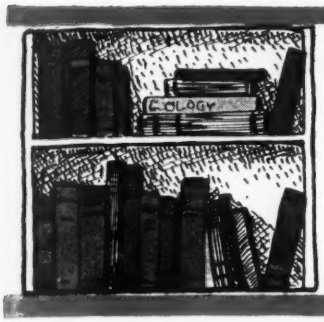
COUPON BOOKS

of Every Description

SELLING Coupon Books is selling the equivalent of money. "Short Books" are difficult to explain to your customers. "Long Books" may cost you money. Allison books are accurate and trouble-free. *Write us for Samples and Prices.*

Allison Coupon Company

Indianapolis, Indiana



Oil Man's Bookshelf

Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to ***improve your mind.***

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

OIL AND GREASE FORMULAS

By Forrest A. Hoff

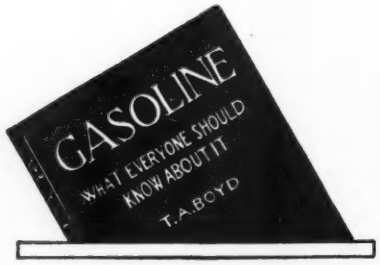
200 guaranteed formulas, with instructions for their use, by Forrest A. Hoff, consulting lubricating engineer.

Recommended to the jobber who wants to make and sell his own line of grease and oil.

The set consists of a compounding chart, Key to Formulas and a Book of Instructions—all arranged with a system of keying that insures secrecy by controlling the compounding from the office, the plant employees working with a series of numbered oils.

For the jobber who plans to make and sell his own line of oils and greases, these tested and proved Formulas will save him money.

200 Formulas complete—price $15.



This is the complete story of "*Gasoline*" told in popular language, and written by an authority on the subject of its use in motor cars—T. A. Boyd, head of fuel oil section, General Motors Research Corp.

What gasoline is, where it comes from, its properties, what distinguishes good gasoline from bad, how the motorist can get more miles out of a gallon, and help in the economy of this important fuel—all these facts are given in chatty, non-technical style and profusely illustrated.

"*Gasoline*" is a message to the public that has so often been recommended to the oil industry. Every man engaged in the making and distributing of motor fuel should read it.

206 pages—popularly priced at $2.50.

LUBRICATING OIL SALESMAN'S PRIMER

The "Lubricating Oil Salesman's Primer" is a new book by Claude Ettele, associated with one of the big oil companies in this country. The author's purpose is "to properly present a first view of the subject of lubrication and encourage the young salesman to study advanced works without which he will be unable to develop maximum efficiency in the services of his employers and of his customers."

The book takes up the manufacture of various lubricating oils and greases; tests by which oil and grease specifications are written; general discussion of lubrication problems in cylinders, turbines, internal combustion engines; power transmission machinery such as shafting; wire ropes; belts, gears, bearings, etc., driven machines such as air compressors, pneumatic tools, ice machinery, machine tools, textile machinery, paper mills, mine and quarry machinery.

"Lubricating Oil Salesman's Primer" also gives a standard line of lubricants, and specifies which oils or greases are applicable to the various kinds of machinery. This book is well worth its price of $3.00. Send for your copy today!

Cut out and mail

National Petroleum News,
802 Caxton Bldg., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____

- ☐ Oil and Grease Formulas $15
- ☐ Gasoline $2.50
- ☐ Lubricating Oil Salesman's Primer $3

NAME_____

Address_____

_____

_____

ON THE LAZY BENCH

National Petroleum News

In Other Words

Professor: Your pneumatic contrivance has ceased to function.

Ed Merydith: Er—what?

Professor: I say, your tubular air container has lost its rotundity.

Ed: I don't quite—

Professor: The cylindrical apparatus which supports your vehicle is no longer inflated.

Ed: But—

Professor: The elastic fabric surrounding the circular frame whose successive revolutions bear you onward in space has not retained its pristine roundness.

Ed: Would you kindly—

Small Boy: Hey, mister, you got a flat tire!

Marland Service Man

* * *

"I am very sorry to tell you," he said slowly, looking down at the very sick man in bed, "that there is no doubt you are suffering from scarlet fever, and, as you know, it is extremely contagious."

The patient slowly turned his head upon the pillow and looked toward his wife.

"Dearie," he said in a very faint voice, "if any of my creditors call, you can tell them at last that I am in a position to give them something."

—Skelly News

* * *

Mixed Trade Slang

Before Mr. Sylias Slike started working in the oil country, he was a Sheep herder in Wyoming. He decided that he would like to work in the oil fields so he went into the Oil Well Supply store in Casper, Wyoming, and asked a contractor for a job dressing tools. The Contractor asked Mr. Slike if he could "run a Ram," to which Mr. Slike answered, "Run one, H——, I kin ketch him."

—Bridgeport Driller.

* * *

Domestic Life Today

"Our new kitchenette is just large enough for one to work in," remarked the newlywed.

"Joke's on your wife at dishwashing time, eh?" asked his friend

"No-o-o. But I don't mind drying them, too, while I'm at it."

—Skelly News

The Buzzer Is Stung

Walter Morris' taste for frog legs is no more. One day last week Walter decided that he could enjoy a dish of Louisiana's pride. While trying to order over the 'phone, the following buzzing took place:

Walter (receiving wrong number): "Hello! Hello!"

Feminine voice (sweetly): "What is it please?"

Walter: "Madame, have you Frog legs?"

Feminine voice (harshly): "You poor bum, if I had my feet on your neck, you would think I had elephant legs."

Bit and Tongs

* * *

Doctor: "Your trouble is known as seeing double and should be corrected at once. Only last week a man came in with the same defect in his sight. He had lost his job because of it."

Patient: "Oh, it does not bother me that way. In fact I had my wages raised twice since this ailment came on."

Doctor: "What do you do for a living?"

Patient: "I read gas meters."

* * *

With all the talk about efficiency and the eliminating of useless things, why doesn't someone suggest to the Payroll Dept. that they could probably save printing costs on the pay checks by leaving off this little admonition: "This check must be cashed within 15 days from date of issue." That's optimism, sure enough.

—Refiners Flash and Fire.

* * *

A gentleman on his first visit to an oil field heard them mention the tool dresser a number of times. He evidently thought a tool dresser was a part of the machinery for on entering a drilling rig inquired, "What does the tool dresser look like?" The driller immediately answered, "He looks like an airdale dog now, but you would take him for a human if he would get a shave."

—Bridgeport Driller.

* * *

Small boy: "Father, how do they catch lunatics?"

Father: "With face powder, beautiful gowns, pretty smiles, and soft words, my son."

—Bridgeport Driller.

All-in-One-Folio

Your Name in Gold FREE

$25.00

Folio opens out to full Display

361—This Folio is substantially made from heavy, smooth, 5-oz. black cowhide. No flaps—Solid ends. Opens out for full display. Contains eighteen 4-oz. bottles with metal capped corks. Bottles partitioned separately. Case also contains six 1-oz. squat grease jars. Plenty of room for literature and order blanks.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

Oil Bottle Spouts and Carrying Trays

for use on standard milk bottles or screw top jars. A convenient and profitable line for jobbers as it is not necessary to carry the bottles.

Our inside fastening spout is illustrated and fits any dairy bottle U. S. or foreign.

Our special design carrying trays are substantial and ornamental. Enameled red. *Jobbers Wanted.*

C. C. VAN TINE

Bartlesville, Okla.

This SIGN invites the careful motorist into your station!

THE meaning of this sign is becoming more and more widely known to alert and careful motorists. When they see it on your station they *know* that you are a Dealer who not merely sells oil, but *gives correct lubrication.*

The Dealer who shows this Sign asks the man who drives in for oil—*"What is the mileage on your speedometer?"* Then he consults the Sinclair Recommendation Index and gives the motorist exactly the right grade of Opaline to fit the degree of wear in the car's engine and *seal* its power!

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Authorized Dealer

SINCLAIR OPALINE MOTOR OIL

REG. U. S. PAT. OFF.

Seals Power at every Degree of Wear

Refinery - Tank Wagon Markets

National Petroleum News

Refined and Natural Gasolines Active Prices Are Little Changed

TULSA, June 4

ACTIVE gasoline buying by both jobbers and marketers the first two days of the week, two large export orders for natural gasoline, and steady demand for heavy oils from industrial users brought considerable business to the doors of Mid-Continent refiners. As the week closed more than one sales-manager said he was well pleased with the volume of business done over the five-day period, the week being shortened one day by Memorial Day holiday.

Failure of gasoline consumption throughout the middle west over the holiday to come up to expectations probably prevented refinery prices for gasolines from showing a full quarter of a cent advance, many of the trade said; but prices did show an eighth of a cent advance over the previous week. Pre-holiday ideas of Oklahoma refiners, generally speaking, were that conditions after the three-day holiday would warrant a 7-cent market for 58-60 U. S. Motor gasoline. They did not figure on bad weather over the holiday.

With but few exceptions refiners in Tulsa on Tuesday, May 31, reported a fairly large volume of inquiries from the jobbing trade. Several large Oklahoma refiners, in anticipation of the holiday consumption, May 28 advanced their prices for 58-60 U. S. Motor gasoline to 7 cents. With consumption not touching the peak expected, a compromise on the amount of the advance in refinery prices was effected. As this week closed a few of these refiners maintained their stand; but the volume of U. S. Motor gasoline moved at 7 cents was small in comparison to the volume of goods sold at prices from a quarter to three-eighths of a cent under this figure.

Actions of the Chicago marketing trade indicate to some extent the general feeling about the present gasoline situation. Chicago brokers who a week ago were refusing to buy at 6.375 and 6.50 cents, bought in the neighborhood of 500 cars of 58-60 U. S. Motor grade this week at 6.50 cents for resale. Goods available at this price vanished quickly and, later in the week, considerable quantities of the above grade were purchased for resale at 6.625 cents. Other resale buyers in the Chicago district took from two to three-day options on small quantities of U. S. Motor at 6.625 cents.

The Tulsa representative of one Chicago marketing company said:

"I don't seem to be able to make my firm realize that 6.50 cent U. S. Motor is hard to find. To safeguard ourselves we've taken options on small quantities of stuff at 6.625 cents, until our Chicago office is satisfied that 6.50 cents is pretty hard to do."

ALTHOUGH the demand for high gravity gasoline from the domestic trade showed comparatively little betterment over the last week, prices for these grades had a tendency to move up along with the heavier gasoline, and also in view of the small export order placed in north Texas the early part of the week.

The status of the high gravity gasoline market can be judged from the activities of one exporter who was in the market for 60-62, 390 end point goods. He succeeded in buying part of his requirements of 550,000 gallons of this commodity at 6.625 cents but was forced to pay 6.75 cents per gallon for the bulk. It is reported this exporter has standing orders with several north Texas refiners for 60-62 390 end point gasoline when they are willing to sell at 6.65 cents.

A wide range of prices was reported as paid by the domestic trade for small lots of high test gasolines. One north Texas refiner reported the sale of 15 cars of 64-66, 375 end point gasoline at 7.125 cents, Group 3, whereas an Oklahoma refiner reported the sale of 390 end point gasoline of the same gravity at 7.50 cents per gallon.

Aside from the purchase of approximately 400 cars of grade AA absorption by two exporters this week, the natural gasoline market was generally quiet. Early in the week 200 cars of this grade were reported sold by one manufacturer at 6 cents per gallon, shipment to be completed in six weeks. Smaller lots were sold to another exporter by several manufacturers, the total being 200 cars at around 5.75 cents.

Domestic buyers in the market this week were few in comparison to the number in the market the past 30 to 45 days. Grade AA continued to be the most plentiful commodity and several manufacturers stated they were shipping AA on BB orders to keep their production of AA moving. Due to climatic conditions more grade AA is being manufactured than is the case during the cooler months.

THE demand for kerosene fell off somewhat this week but prices show little change. The volume of business placed was smaller than last week and the week before.

Few buyers were in the market for gas oil. The largest sale reported this week was 100 cars of 32-36, at 2.50 cents per gallon for shipment over June. Another resale buyer reported paying 2.625 cents per gallon for 40 cars of the same grade.

The price differential between the high and low gravity fuel oils continued to diminish this week. Two refiners were reported to have taken on considerable business over June on the 14-16 and 16-18 grades at $0.80 per barrel. The transactions, however, did not affect spot prices. The reported minimum spot price made on the 14-16 gravity stuff this week was $0.85 per barrel. The 18-22 gravity material continued hard to find under $0.90.

Refiners generally reported good movement of cylinder stocks and neutral oils. Bright stocks particularly were in good demand. Prices were generally unchanged over quotations of last week.

Correction

In the refinery market tables in the issue of June 1, the wrong columns of prices had been transferred under dates of May 23 and May 16; hence all prices appearing under those two colums were in error. May 31 prices were correct.

Prices in all columns in this issue are corrected.

JENKINS CRACKING PROCESS

PRODUCES QUALITY GASOLINE

Facts from performance

Jenkins Licensees know the advantages of low operating costs and quality products having found it advantageous to keep all their Units in operation during the present period of reduced margins.

GRAVER *Founded 1857* *Corporation*

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

	Prices June 6	Prices May 31	Prices May 23
PENNSYLVANIA			
52-54 Naphtha	8.75 – 9.50	8.75 – 9.00	8.75 – 9.00
54-56 Naphtha	8.75 – 9.50	9.00 – 9.50	9.00 – 9.50
58-60 Gasoline	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
60-62 Str.-run gasoline	9.50 –10.00	9.25 –10.00	9.25 –10.00
64-66 Str.-run gasoline	10.00 –	10.00 –10.75	10.00 –10.75
68-70 Str.-run gas. 350-360 E.P.	10.75 –12.00	–11.00	–11.00
68-70 Str.-run gas. 305-320 E.P.	17.00 –18.00	–18.00	–18.00
OKLAHOMA			
48-50 450 E. P. naphtha	– 6.50	6.25 – 6.50	6.25 – 6.50
50-52 450 E. P. naphtha	– 6.50	6.25 – 6.50	6.25 – 6.50
56-58 450 E. P. gasoline	–†6.50	†6 25 – 6.50	– 6.25
56-58 U.S. Motor 437 E.P.	††–6.50	†6.25 – 6.50	–†† 6.25
58-60 450 E. P. gasoline	– 6.50	†6.25 – 6.50	–†6.25
58-60 U.S. Motor 437 E.P.	6.50 – 7.00	6.625– 6.875	6.50 – 6.625
60-62 437 E. P. gasoline	6.625– 7.125	6.625– 6.875	6.50 – 6.75
60-62 400 E. P. gasoline	7.00 – 7.25	6.875– 7.00	6.75 – 7.00
64-66 390 E. P. gasoline	–†7.00 – 7.25	7.00	–†7.00
64-66 375 E. P. gasoline	†7.25 – 7.50	–†7.00	†7.00 – 7.25
68-70 350-360 E. P. gas	7.50 – 7.75	7.50 – 7.25	7.50 – 7.75

†Prices Nominal. ††Only one refiner quoting. *Quotation only.
**Represents quotations and sales.

KANSAS*			
58-60 U.S. Motor 437 E.P.	7.00 – 7.25	7.00 – 7.125	6.75 – 7.00
60-62 400 E. P. gasoline	7 25 – 7.50	7.25 – 7.50	7.00 – 7.25
64-66 375 E. P. gasoline	7.50 – 7.75	7.50 – 7.75	– 7.50
NORTH TEXAS			
48-52 450 E. P. naphtha	†6.25	†6.00 – 6.25	–†6.00
56-58 450 E. P. gasoline	–†6.25	†6.00 – 6.25	–†6.00
58-60 450 E. P. gasoline	– 6.25	– 6.25	6.00 – 6.125
56-58 U. S. Motor 437 e.p.	††6.25–	††6.25 –	††– 6.25
58-60 U. S. Motor 437 e.p.	– 6.50	6.375– 6.50	6.25 – 6.50
64-66 390 E. P. gasoline	– 6.875	– 6.75	– 6.75
64-66 375 E. P. gasoline	– 7.00	6.875– 7.00	6.875– 7.00
68-70 350-360 E.P. gasoline	*7.25 – 7.50	*7.25 – 7.50	*7.25 – 7.50

†Prices nominal. ††Only one refiner quoting. *Quotations only.

NORTH LOUISIANA			
56-58 U. S. Motor gasoline	6.75– 6.875	– 6.75	– 6.75
ARKANSAS (For Arkansas Intrastate shipment only.)			
56-58 450 E. P. gasoline	– 6.75	6.50 – 6.75	– 6.25
58-60 450 E. P. gasoline	– 6.75	6.50 – 6.75	– 6.25
58-60 U. S. Motor 437 E. P.	7.00 – 7.50	7.00 – 7.25	6.875– 7.00
CALIFORNIA			
*54-58 U.S. Motor 437 E.P.	7.50 –8.50	7.00 – 8.00	7.00 – 8.00
*58-60 U.S. Motor 437 E.P.	8.50 – 9.50	8.00 – 9.00	8.00 – 9.00
*42-45 Eng. dis. 445-480 E.P.	6.00 – 7.00	7.00 –	– 7.00

*2c tax to be added if used in state.

NEW ENGLAND (F. O. B. Boston and Fall River)			
58-60 U. S. Motor gas	–10.08	–10.08	–10.08

NATURAL GASOLINE

(Note: End point of all grades, not over 375°F.)

OKLAHOMA			
Grade AA,80-87.9,90% Rec	– 5.50	5.875– 6.00	– 6.25
Grade A,72-79.9,90% Rec.	– 5.50	5.875– 6.00	– 6.25
Grade BB,84-92,85% Rec.	5.25 – 5.375	5.375– 5.50	5.50 – 5.75
Grade B,76-83.9,85% Rec.	5.25 – 5.375	5.375– 5.50	5.50 – 5.75
Grade C, 80-90, 78% Rec.	†5.125– 5.25	*5.25– 5.50	5.50 – 5.625

†Prices Nominal. *Quotation only.

NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†5.75	–†6.125	–†6.50
Grade BB	–†5.50	–-5.50	†5.75 – 6.00
Grade C	†5.25	–-5.50	–†5.75

†Prices Nominal.

NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9,90% Rec.	– 5.50	5.875– 6.00	– 6.25
Grade A, 72-79.9, 90% Rec.	– 5.50	5.875– 6.00	– 6.25
Grade BB, 84-92, 85% Rec.	5.25 – 5.375	†5.375– 5.50	5.50 – 5.75
Grade B,76-83.9, 85% Rec.	5.25 – 5.375	†5.375– 5.50	5.50 – 5.75
Grade C, 80-90, 78% Rec.	†5.125– 5.25	5.25 – 5.50	– 5.50

†Prices nominal. **Quotations.

CALIFORNIA			
75-85, 375-390 E. P. blend	6.00 – 8.00	6 00 – 8.00	6.00 – 8.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 E.P.	8.75 – 9.50	9.00 – 9.50	9.00 – 9.50
64-66 Blend 437 E.P.	8.75 – 9.50	9.00 – 9.50	9.00 – 9.50
60-62 Blend 437 E.P.	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
OKLAHOMA			
64-66 Blend 437 E.P.	– 6.25	6.125– 6.25	6.125– 6.25

BURNING OILS

PENNSYLVANIA			
45 w. w. kerosene	6.50 – 6.75	6.50 – 7.00	6.50 – 7.00
46 w. w. kerosene	6.75 – 7 00	7.00 – 7.50	7.00 – 7.50
47 w. w. kerosene	7.25 – 7.50	7.50 – 7.75	7.50 – 7.75
OKLAHOMA			
41-43 w. w. kerosene	4.375– 4 50	4 375– 4.50	4.375– 4.50
42-44 w. w. kerosene	4.625– 4.75	– 4.75	4.75 – 4.875
KANSAS			
41-43 w. w. kerosene	5.25 – 5.50	– 5.50	– 5.50
42-44 w. w. kerosene	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
NORTH TEXAS			
40-42 w. w. kerosene	– 4.00	4.00 – 4.125	4.00 – 4.125
41-43 w. w. kerosene	– 4.25	4 25 – 4.375	4.25 – 4.375

†Prices nominal.

NORTH LOUISIANA			
91-43 w. w. kerosene	– 4.75	4.50 – 4.75	4. 50 – 4.75
ARKANSAS			
41-43 w. w. kerosene	– 4.75	– 4.75	– 4.75
42-44 kerosene	– 5.00	– 5.00	– 5.00
CALIFORNIA			
38-40 w. w. kerosene	5.50 – 6.00	5.50 – 6.50	5.50 – 6.50
NEW ENGLAND			
40-43 w. w. kerosene	–*7.50	–*7.50	

*Only one refiner quoting.

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)

Vis.			
200 No. 3 Assoc. Filt.	34 –34.50	34.00 –35.00	34.00 –35.00
180 No. 3 Assoc. Filt.	30.50 –32.00	30.50 –32.00	30.50 –32.00
150 No. 3 Assoc. Filt.	28 –28.50	28.25 –30.00	28.25 –30.00
34 Grav. 330-340 Flash	7.00 – 7.75	7.00 – 7.75	7.00 – 7.75
36 Min. Neut. 300-305 Flash	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50

†Prices Nominal.

***OKLAHOMA** (Viscosity at 100° F.)

Vis. Color			
100—No. 2	6.00 – 7.50	6.00 – 7.50	5.75 – 7.50
150—No. 3	8.50 – 8.75	8.50 – 8.75	8.25 – 8.75
150—No. 4	8.25 – 8.50	8.25 – 8.50	8.00 – 8.25
180—No. 3	9.50 –10.25	9.50 –10.50	9.50 –10.25
180—No. 4	– 9.75	9.75 –	– 9.75
180—No. 5	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
200—No. 3	10.00 –11.00	10.00 –11.00	10.00 –11.00
200—No. 4	10.50 –10.75	10.50 –10.75	10.50 –10.75
200—No. 5	9.00 –10.50	9.00 –10.50	9.00 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	14.00 –15.00	14.00 –15.00	14.00 –15.00
240—No. 4	13.50 –	–13.50	–13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	16.00 –17.00	16.00 –17.00	16.00 –17.00
280—No. 4	–15.25	–15.25	–15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00 –	17.00 –	–17.00

*Represent quotations and sales.

GULF COASTAL (Viscosity at 100° F; pour test 0)

Vis. Color			
100—No. 2 Unfilt. Pale	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
200—No. 3 Unfilt. Pale	10.50 –11.00	10.50 –11.50	10.50 –11.50
300—No. 3 Unfilt. Pale	11.50 –12.00	11.50 –12.50	11.50 –12.50
500—No. 3½ Unfilt. Pale	13.50 –14.00	13.50 –14.50	13.50 –14.50
750—No. 4 Unfilt. Pale	16.00 –16.50	16.00 –16.50	16.00 –16.50
200—No. 5½ Red Oil	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
300—No. 5½ Red Oil	10.00 –11.00	10.00 –11.00	10.00 –11.00
500—No. 6 Red Oil	11.50 –12.50	11.50 –12.50	11.50 –12.50
750—No. 6 Red Oil	14.50 –15.50	14.50 15.50	14.50 –15.50

CALIFORNIA (Viscosity at 100° F.)

Vis. Color			
100—No. 2	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
100—No. 3	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
200—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
300—No. 3	10.50 –11.00	10.50 –11.00	10.50 –11.00
450—No. 3-3½	13.00 –13.50	13.00 –13.50	13.00 –13.50
550—No. 3-3½	14.50 –15.00	14.50 –15.00	14.50 –15.00
600—No. 3-3½	15.00 –15.50	15.00 –15.50	15.00 –15.50
100—No. 5	– 6.50	– 6.50	– 6.50
200—No. 5	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
400—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
500—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
600—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
700—No. 7	14.00 –14.50	14.00 –14.50	14.00 –14.50

CYLINDER STOCKS

***OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31 00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	26.00 –28.00	26.00 –28.00	26.00 –28.00
600 E. St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Black Oil	– 5.00	– 5.00	– 5.00

*Represent quotations and sales

PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	9 –10.25	9.00 – 9.50	9.00 – 9.50
650 Steam Refined	11 –12.50	13.00 –13.50	13.00 –13.50
600 Flash	.17 – .18	–17.00	–17.00
625 Flash	.27 – .29	–29.00	–29.00
600 Warren E	.18 – .20	18.50 –20.00	18.50 –20.00
600 Oil City E	.17 – .18	17.50 –18.00	17.50 –18.00
600 D Filtered	25.00 –26.00	25.00 –26.00	25.00 –26.00
Cold Test Stocks (brt. filt.)	33.00 –34.00	33.00 –34.00	33.00 –34.00
Cold Test Stock (dark filt.)	31.00 –32.00	31.00 –32.00	31.00 –32.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

LONG RESIDUUM STOCKS

PENNSYLVANIA			
60-65 vis. @ 210, 440-450 flash No. 5% color	–33.50	33 00 –34.00	33.00 –34.00
70-75 vis. @ 210, 450-455 flash No. 6 color	34.00 –34.50	34.00 –35.00	34.00 –35.00
80-85 vis. @ 210, 440-450 flash No. 7 color	–36 00	35 00 –36.00	35.00 –36.00
80-85 vis. @ 210, 450-460 flash No. 7-8 color	–36.50	36.00 –37.00	36.00 –37.00
80-85 vis. @ 210, 460-465 flash No. 7 color	–37.00	36.00 –38 00	36.00 –38.00
95-100 vis. @ 210, 490-495 N flas. ho8 color	–38.50	–39.00	–39.00

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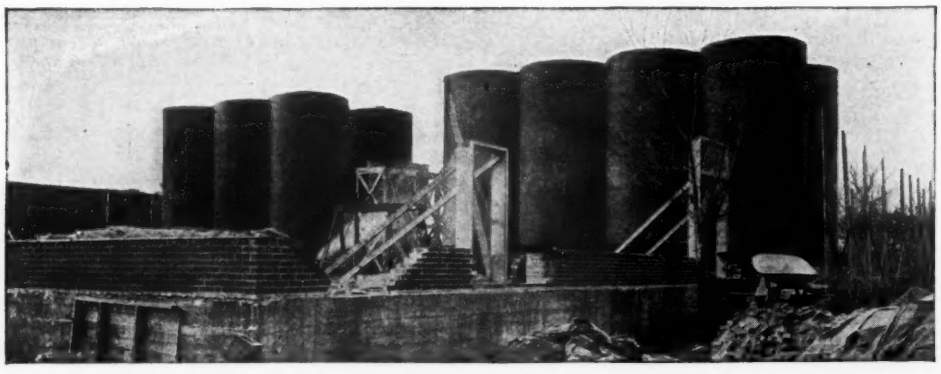

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Filling Station Tanks_____ Size_____ Pumps_____
Truck Tanks _____ Size_____ Compts_____
Other Equipment_____
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Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ sign is shown

(For quick reference to Refinery prices, get the OIL PRICE HANDBOOK, published annually)

WAX

	Prices June 6	Prices May 31	Prices May 23
***PENNSYLVANIA**			
122-124 White Crude Scale	3.00 – 3.25	2.60 – 2.75	– 3.00
124-126 White Crude Scale	3.00 – 3.25	2.60 – 2.75	3.00 – 3.25
*Per Pound, New York			
***OKLAHOMA**			
*124-126 White Crude Scale	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
*Oklahoma wax represents quotations and sales prices.			
CALIFORNIA			
White Crude Scale	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil	4.50 – 5.00	4.875– 5.125	4.875– 5.125
30-34 Fuel Oil	4.50 – 5.00	4.75 – 5.00	4.75 – 5.00
28-32 Fuel Oil	4.50 – 5.00	4.75 – 5.00	4.75 – 5.00
OKLAHOMA			
38-40 Straw distillate	3.125 –3.25	3.125– 3.25	3.125– 3.25
36-38 Straw distillate	– 3.00	– 3.00	– 3.00
32-36 Gas oil cracked	– 2.625	– 2.75	– 2.75
32-36 str. reduced Gas oil	– 2.75	2.75 – 2.875	2.75 – 2.875
28-30 Fuel oil (Bbl.)	$ .975– 1.00	$.975– 1.00	$.975– 1.00
26-28 Fuel oil (Bbl.)	$ .926– .95	$.925– .95	$ .925– .95
24-26 Fuel oil (Bbl.)	– .925	– .925	–$ .925
22-26 Fuel oil (Bbl.)	– .925	– .925	–$ .925
18-22 Fuel oil (Bbl.)	$ .85 – .90	$.85 – .90	$ .85 – .90
16-18 Fuel oil (Bbl.)	$ .825– .85	$.825– .85	$ .825– .85
14-16 Fuel oil (Bbl)	$ .825– .85	$.825– .85	$ .825– .85
†Prices nominal.			
KANSAS*			
38-40 Straw Distillate	– 3.75	– 3.75	– 3.75
36-38 Straw Distillate	– 3.25	– 3.25	– 3.25
32-36 Gas Oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
24-26 Fuel Oil	–$1.10	–$1.10	–$1.10
18-22 Fuel Oil	$ .95 –$1.00	$.95 – $1.00	$ .95 –$1.10
*F. O. B. refinery Kansas		destination.	
NORTH TEXAS			
38-40 Straw distillate	– 3.00	– 3.00	– 3.00
32-36 Gas Oil (Gal.) cracked	2.50 – 2.625	– 2.625	– 2.625
32-36 uncracked gas oil	– 2.625	2.75 –2.625	2.625– 2.75
24-26 Fuel per (Bbl.)	$ .85 – .90	$ .85 – .90	$ .85– .90
GULF COASTAL			
Fuel	$1.60 – 1.65	$1.60 – 1.65	$1.60 – 1.65
Gas Oil	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75

NORTH LOUISIANA	Prices June 6	Prices May 31	Prices May 23
32-36 Gas oil, cracked (Gal.)	– 3.00	– 3.00	– 3.00
32-36 Gas oil, uncracked (Gal.)	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
16-20 Fuel Oil (Bbl.)	$1.15 – 1.15	$1.15 – 1.15	$1.10 – 1.15
ARKANSAS			
28-32 Gas oil	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 Gas oil	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*Smackover Crude Fuel	$1 125 – 1.15	$1.125 –$1.15	$1.10 – 1.15
*For unrestricted shipment.			
CALIFORNIA*			
14-18 Fuel Oil (Bbl.)	$ .75 – 1.00	$ .75 – 1.00	$ .75 – 1.00
14-18 Bunker Oil (Bbl.)	$ .80 – 1.00	$ .80 – 1.00	$ .80 – 1.00
30-34 Gas Oil (Bbl.)	$1.00 – 1.05	$1.00 – 1.05	$1.05 – 1.05
27+Diesel Oil (Bbl.)	$1 00 – 1.05	$1.00 – 1.05	$1.00 – 1.05
*(San Joanquin Valley, San Francisco 4c per bbl. more.)			
NEW ENGLAND (F. O. B. Boston and Fall River)			
30-32 Gas Oil (Gal.)	– 5.75	– 5.67	– 6.00
Fuel Oil (Bunker C) Bbl.	–$1.87	–$1.82	–$1.87

PETROLATUMS

PENNSYLVANIA (Cents Per Pound in Tank Cars)*		
Snow White	7.25 – 7.50	7.25 – 7.50
Lily White	– 6.25	– 6.25
Cream White	– 5.25	– 5.25
Light Amber	2.625– 2.75	2.625– 2.75
Amber	2.375– 2.50	2.375– 2.50
Red	– 2.125	– 2.125
Green No. 5 Color	– 1.50	– 1.50
*In barrels .75c a pound more, carlots.		

* PETROLEUM COKE

OKLAHOMA (Per ton in carlots)			
Lump	–$5.00	–$5.00	–$5.00
Breeze	– 2.00	– 2.00	– 2.00
Still Run	– 3.00	– 3.00	3.00
*Represent quotations and sales.			

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Gasoline Market Is Firmer on Pacific Coast

LOS ANGELES, June 4

THERE was a marked tightening in the gasoline market in California the past week, noticeable particularly in tank car quotations within the state.

The California refiner is not in a very good humor, and has begun to ask higher prices, and, by standing pat, he is getting higher prices. For instance, it is impossible this week to buy gasoline to ship outside the state at less than 7 cents tank car lots; and, again, it is impossible to buy more than a very few cars for shipment to points within the state at less than 7½ to 8½ cents.

Some major companies are quoting tank car gasoline at 11½ cents, and they stand on their quotations. In one or two instances, a larger company has offered gasoline to move outside the state at less than the prevailing 11½-cent quotation. There is at least one cent and at times two cents between their quotations for shipments outside and inside the state. You can buy at a less figure to ship outside.

The stronger tank car market is having effect on the export market, although actual quotations are unchanged. There is simply less disposition to bid on a cargo and reduce the price to get the business. At least two cargoes for export were available ten days ago at 5½ cents, but the past week no gasoline for export was available at less than 6 cents and some were asking more.

Tanker rates to East Coast points are unchanged and stand at an asking price of 95 cents to $1.05 a barrel for clean bottoms, with dirty bottoms, 5 to 10 cents higher.

Some of the smaller refiners are having trouble getting rid of their fuel oil, and some fuel has been sold at 65 cents a barrel in tank cars for movement to Pacific Coast trade territory points. In fact, fuel oil is worth more for tanker movement than in tank cars. The smaller refiner seldom is in position to move his product to tidewater and is forced to sell in tank cars. Competition has been keen, and as a result the low figure is prevailing for this class of trade. The larger refiner, with tidewater loading facilities, is in a position to command from 5 to 15 cents more for his fuel.

Engine distillate is rather plentiful and some was offered this week at 6 cents, although the real market is around 6½ to 7 cents. Not very much is moving, even by shading the price. There is no change in quotations on kerosene, with tank car prices holding around 5½ to 6 cents and export quotations at 5 to 5½ cents. Only one cargo of kerosene was exported from Los Angeles Harbor during May.

The crude market can be said to be slightly firmer. No one is offering in the open more than 60 cents for Seal Beach crude, but, since it is known now that Seal Beach production will decline rather rapidly, there is a disposition on the part of some of the refiners to seek this crude, with rumors that as high as 70 cents is being paid.

Production at Seal Beach the past week showed an increase, but this was due to the completion of a number of wells, some of them taking in more formation. But this situation is only temporary and the expected decline is delayed only one or two weeks.

CLEVELAND, O.—Wall and Steigerwald, Inc., jobbers of petroleum products, have removed their offices on June 1 from the Union Trust Bldg. to suite 1710 Engineers Bank Bldg. according to Gustav J. Steigerwald.

Gasoline Buying Is in Small Lots in Chicago Market

CHICAGO, June 4

SPOT market for 58-60 U. S. Motor gasoline was more active at the opening of the month. Jobbers were more interested in gasoline than late in May and have placed many orders for small quantities. Trade reported no large orders.

Reports from nearby jobbers indicated good consumption over the holiday. A small station on a main highway in southern Michigan had more gallonage than during any other three-day week end. Weather was generally fair in this marketing territory and showers were local, with some rain in the southeastern portion and in the northern lake region.

U. S. Motor gasoline market closed fractionally higher at 6.75 to 7 cents. Sales Tuesday were made at 6.626 cents, and from Wednesday on the market advanced to the higher figures. Bulk of movement, after business got underway Wednesday, was at 6.75 cents with an increasing number of sales at 6.875 cents. Some sellers were quoting 7 cents and reported good sales at that figure. Resale agents reported Oklahoma gasoline available at 6.50 cents early in the week but scarce at that price.

High test gasolines were in little demand and prices unsettled. The 60-62, 437 e. p. grade advanced with U. S. Motor to 6.75 to 7 cents. The 60-62, 400 e. p. gasoline was quoted at 6.875 to 7 cents Tuesday with sales from Wednesday on at 7.125 cents; 64-66, 375 e. p. opened at 7.25 cents flat and ranged from 7.25 to 7.50 cents today; 68-70, 350-360 e. p. grade continued to be a market of quotations at 7.50 to 7.75 cents.

Kerosene also was in little demand over the week. The 41-43 w. w. grade opened at 4.50 cents, with sales reported at 4.375 cents and at 4.50 cents later in the week.

Heavy oils, which were more active, the last week in March, continued to be in good demand this week. The 38-40 straw distillate was quiet and price firm at 3.25 to 3.375 cents. Sales of gas and fuel oil were for small quantities with no large buying. The 32-36 straw gas oil was 3 to 3.25 cents with more sales of zero cold test material at the higher price; and 32-36 dark gas oil was 2.75 to 2.875 cents.

The 28-30 fuel oil was $1.025 to $1.05 early in the week and closed at $1.00 to $1.05; 24-26 fuel was steady at $0.95, and a carload marketer Friday sold 30 cars of this grade at that price over June. The 22-26 fuel was $0.925 to $0.95; and 18-22 was $0.875 to $0.925, slightly lower than at close last week. Smackover quotations were unchanged at $1.125 to $1.15.

Future inquiries on heavy oils were not as numerous this week. An industrial company early this week purchased 30 cars of 32-36 dark gas oil at 2.75 cents for over June, and a refiner reported sale of 40 cars of 16-20 fuel oil at $0.85. An industrial is in the market now for 2,000,000 gallons of 18 and 28 gravity fuel and for gas oil.

Mostly fair weather is predicted for next week in Standard of Indiana territory with some shower periods especially in the northern portions. Temperatures are forecast as moderate.

Coastal Labs Unchanged

HOUSTON, June 4.—The Gulf Coastal lubricant market is quiet again, with little change in the situation over the last few weeks. Efforts are being made to stimulate sales, but there has been no noticeable increase in business beyond normal. Prices are generally unchanged.

PLATT'S
OILGRAM
Petroleum Markets-Every Day

HOW SURE ARE YOU?

If you were to place an order *today* for gasoline, or kerosene, or fuel oil, or lubricating oil—

How sure would you be that you were buying *at the right time* and *at the actual market?*

Did you hear of a tankwagon cut today in another territory, which might indicate a cut coming in yours? Or, did crude change today? Or, did some one put in a big buying order for export which will stiffen the gasoline market ¼ cent or so tomorrow?

A large part of your profits come from *daily accurate knowledge* of market prices and conditions.

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CHICAGO—35 E. Wacker Drive
CLEVELAND—899 Caxton Bldg.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New Jersey—T.w. and s.s. prices gasoline reduced 3 cents, Parkersburg, to 16.5 and 19.5 cents respectively, **May 27.** S.s. price only reduced 3 cents, Norfolk, to 20.5 cents, **May 14.** Norfolk t.w. unchanged at 20.5 cents.

Benzol Down 1 Cent

NEW YORK, June 6.—A reduction of 1 cent a gallon in the price of motor benzol in tankcars at the ovens was announced by a leading marketer last week. The new price is 21 cents a gallon. Slump in buying coupled with a drop in export buying is held largely responsible.

Large quantities have been moving on contract but very few fresh buying orders of consequence appeared during the week. Production has been holding up well. Pure and 90 per cent benzol remained quiet and prices were 1 cent lower.

Extend Gas Line to Serve Refineries

Tulsa, June 6.—The Interstate Gas Co. which recently completed a 22-inch gas line from the Monroe, La., field to the refinery of the Standard Oil Co. of Louisiana at Baton Rouge, is extending the line to Destrehan, where the Mexican Petroleum Corp. of La., has a 25,000-barrel refinery. It is understood that the line may be extended to serve the New Orleans Refining Co. plant at Norco later. At present the line to Baton Rouge is understood to be handling about 42,000,000 cubic feet of gas per day. This is a little less than half of the capacity of the line.

Waters Again Chief Scout

Tulsa, June 4.—Henry Waters, formerly chief scout of the Sinclair Crude Oil Purchasing Co., Tulsa, is again holding that position. He has been an assistant to R. A. Griffith, vice-president in charge of production of the Sinclair Oil & Gas Co. Mr. Waters succeeds as chief scout Wood E. White, who has returned to his former position as agent for the purchasing company at Casper, Wyo. D. L. Mahoney has been transferred from Casper to Los Angeles.

Continental Laying 50-Mile Line

Tulsa, June 4.—Continental Oil Co. is laying 50 miles of 4-inch line from its Wichita Falls, Tex. refinery to the Nocona field, Montague county. The line will handle part of the company's own production from this field, now estimated at 4,000 barrels daily. The new line will have one pump station in the field and one at an intermediate point.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect May 31, 1927

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Gasoline Tax	Gasoline Total T.W.	Gasoline Total S.S.	Oil T.W.
Atlantic City, N. J.	16	0	16	*	14
Newark, N. J.	16	0	16	18	14
Annapolis, Md.	16	4	20	23	14
Baltimore, Md.	16	4	20	23	10
Cumberland, Ind.	16	4	20	23	14
Washington, D. C.	14	2	16	17	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	20.5	14
Richmond	16	4½	20.5	23.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Williamsburg, Va.	16	4½	20.5	*	14
Charleston, W. Va.	16	3½	19.5	22.5	14
Clarksburg, W. Va.	16	3½	19.5	22.5	14
Keyser, W. Va.	16	3½	19.5	*	14
Parkersburg, W. Va.	13	3½	16.5	19.5	14
Wheeling, W. Va.	16	3½	19.5	22.5	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
High Point, N. C.	16	4	20	*	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	20	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	19	0	19	23	15
Albany, N. Y.	19	0	19	21	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	15	0	15	18	14
Syracuse, N. Y.	19	0	19	21	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	19	3	22	25	15
Manchester, N. H.	17	2	19	21	15
Burlington, Vt.	19	2	21	23	15

*In steel barrels.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*21	14
Philadelphia, Pa.	14	*	14	*19	14
Allentown, Pa.	16	*	16	*21	14
Erie, Pa.	14	*	14	*19	14
Scranton, Pa.	16	*	16	*21	14
Altoona, Pa.	16	*	16	*21	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	1	18	20	15
Boston, Mass.	17	0	17	19	15
Springfield, Mass.	17	0	17	19	15
Worcester, Mass.	17	0	17	19	15
Hartford, Conn.	19	2	21	23	15
New Haven, Conn.	19	2	21	23	15

*2-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	14	5	19	22	15
Covington, Ky.	15	5	20	23	15.5
Clarksdale, Miss.	13	4	17	20	13.5
Gulfport, Miss.	††13.5	4	††17.5	21.5	14
Jackson, Miss.	13	4	17	20	14.5
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.	14	4	18	21	15.5
Mobile, Ala.	13	4	17	20	15
Montgomery, Ala.	15	4	19	22	*16.5
Atlanta, Ga.	†14	3½	18	21	15
Augusta, Ga.	†15	3½	19	22	16
Macon, Ga.	†15	3½	19	22	16
Savannah, Ga.	†14	3½	18	20	14
Jacksonville, Fla.°	13	4	17	20	14
Miami, Fla.°	15	4	19	22	15.5
Tampa, Fla.°	12	4	16	19	15
Pensacola°	**14	4	**18	21	15

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

°Florida gasoline prices include ¼c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Gasoline Tax	Gasoline Total T.W.	Gasoline Total S.S.	Oil T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	10.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	2	16.8	18.8	13.7
Grand Rapids, Mich.	14.7	2	16.7	18.7	13.6
Saginaw, Mich.	14.9	2	16.9	18.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	13	2	15	17	12.9
Duluth, Minn.	15.5	2	17.5	19.5	12.9
Mankato, Minn.	13.1	2	15.1	17.1	12.7
Des Moines, Iowa	14	2	16	18	12.3
Davenport, Iowa	14.5	2	16.5	18.5	12.3
Sioux City, Iowa	14.1	2	16.1	18.1	11.9
Mason City, Ia.	14.5	2	16.5	18.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†14.9	2	16.9	18.9	10.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	11.2
Fargo, N. D.	15	2	17	19	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	3	18.5	20.5	13.9
Huron, S. D.	12.5	3	15.5	17.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.8	3	15.8	17.8	10.8

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month, 3c, except latter discount does not apply in Chicago.

Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.

March 1, 1c discount on kerosene in 50 gal. dumps thru territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	16.25	12.25
McCook	15.75	2	17.75	19.75	13.75
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	14	3	17	18	14.5
Pueblo, Colo.	13	3	16	16	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	15	3	18	20	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah.	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	18	3	21	25	21.5
Los Angeles, Cal.	12.5	2	14.5	18.5	15.5
Fresno, Cal.	13	2	15	19	16.5
San Francisco, Cal.	13	2	15	19	15.5
Reno, Nev.	17	4	21	25	19
Portland, Ore.	13.5	3	16.5	20.5	16.5
Seattle, Wash.	13.5	2	15.5	19.5	16.5
Spokane, Wash.	17.5	2	19.5	23.5	20.5
Tacoma, Wash.	13.5	2	15.5	19.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	13	4	17	20	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	*13.5	2	*15.5	*18.5	*14
Shreveport, La.	12	2	14	17	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	13.5	3	16.5	19.5	15
Memphis, Tenn.	10	3	13	16	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene prices in Louisiana include 1c state tax.

S. O. OHIO

	Gasoline T.W.	Gasoline Tax	Gasoline Total T.W.	Gasoline Total S.S.	Oil T.W.
All Ohio points	16	3	19	21	15

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	3	14	17	10
Oklahoma City	11	3	14	17	10
Tulsa, Okla.	11	3	14	17	10
Fort Smith, Ark.	13	4	17	20	12
Little Rock, Ark.	13	4	17	20	12
Texarkana, Ark.	†15	4	†*19	†*19	12
Dallas, Tex.	†13	3	†16	†16	11
Fort Worth, Tex.	†13	3	†16	†16	10
Houston, Tex.	††16	3	††19	††19	15
San Antonio, Tex.	†13	3	†16	†16	11
El Paso, Tex.	**16	3	**19	**19	16

*Within city of Texarkana the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

†3c per gal. discount to dealers.

**2c per gal. discount to dealers at El Paso, Feb. 28.

††4c per gal. discount to dealers at Houston, March 16, 1927.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	16	18	18
Detroit	17.7	19.7	19.7
Kansas City	16.2	†18.2	†18.2
Milwaukee	16.7	*20.7	*20.7
Minneapolis	*20	*22	*22
St. Louis	15.9	17.9	17.9
New York	..	19	

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Gasoline Tax	Gasoline Total T.W.	Gasoline Total S.S.	Oil T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	23.5

MANITOBA

Winnipeg	24.5	3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5	0	27.5	32	27.5

ALBERTA

Edmonton	26.5	3	29.5	33	25.5
Calgary	24.5	3	27.5	31	23.5

BRITISH COLUMBIA

Vancouver	20	3	23	27	21

QUEBEC

Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	25	23
Three Rivers	22.5	3	25.5	29	23

NEW BRUNSWICK

St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24

NOVA SCOTIA

Halifax	24.5	3	27.5	32	24
Sydney	26.5	3	29.5	34	26

PRINCE EDWARD ISLAND

Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Gasoline Easy but Refiners Expect Foreigners Must Soon Buy

By Special Correspondent.
NEW YORK, June 6.

GASOLINE was easier last week. Only one bulk sale was recorded, although there was a much better inquiry from French and British buyers. Most of the big Continental buyers are still operating hand-to-mouth in hopes of securing more favorable prices but in the meantime consumption abroad is mounting and stocks are depleted.

Kerosene was weak both at New York and the Gulf ports. Gas oil was barely steady. Waxes were lower, following the withdrawal of export buyers, from the market. Pennsylvania lubricants have been in fairly good demand at steady prices. Bunker oil was lower at the Gulf.

Export Gasoline—New York

While export demand for gasoline again lagged last week, refiners are more optimistic as a result of the sharp gain in domestic consumption. All of the big refiners were asking 9 cents a gallon for U. S. Motor gasoline at the refineries. A large British buyer was inquiring for 50,000 barrels of U. S. Motor and 64-66 gravity 375 e. p. gasoline and a little prime white kerosene but this is still pending. A French buyer was inquiring for 40,000 barrels of 64-66 gravity 375 e. p. gasoline and U. S. Motor gasoline but this did not materialize.

Cased gasoline was moving chiefly on contract. A sale of 20,000 cases of U. S. Motor for July shipment to a Far Eastern buyer was reported by a leading Independent refiner. On Saturday the Standard Oil Co. of New Jersey advanced the price of cased gasoline ½ cent a gallon to 24.90 cents a gallon.

Export Gasoline—Gulf Ports

A leading Gulf refiner sold a cargo of U. S. Motor at 7¼ cents and 64-66 gravity 375 e. p. at 8¼ cents a gallon for July-August shipment to France. A leading Independent was working on two inquiries from France for 50,000 barrels of U. S. Motor and 64-66 gravity 375 e. p. gasoline each for July-August shipment. At the close of the week U. S. Motor was offered at 7¼ cents a gallon. For 60-62 gravity 400 e. p., the price was 7¼ cents while 61-63 gravity 390 e. p. was held at 7½ to 7¾ cents. For 64-66 gravity 375 e. p. the general asking price was 8¼ cents.

Cased gasoline remained quiet and leading refiners reported little fresh buying. A sale was reported by a leading Independent refiner of 25,000 cases of U. S. Motor and 64-66 gravity 375 e. p. for August shipment to Australia at $1.65 and $1.75 a case respectively.

Export Kerosene—New York

Export demand for kerosene was spasmodic and light. Foreign buyers are showing little interest in the market and are not expected to operate on a large scale until they begin buying for fall requirements. Stocks are large and there were reports current of impending reductions which failed to materialize. Leading refiners were asking 6¾ cents a gallon for 41-43 gravity and 7 cents for 43-45 water white kerosene in bulk at the refineries. Cased kerosene demand was slightly more active. A leading Independent refiner sold 30,000 cases for July shipment to South America while another sold 20,000 cases for June-July shipment to the Near East.

Export Kerosene—Gulf Ports

European buyers appeared less interested in kerosene last week. The market was softer, although all of the big refiners were still asking 5⅛ cents a gallon for 41-43 prime white and 6⅛ cents a gallon for 44 water white in bulk. An inquiry from Scandinavia for 25,000 barrels of prime and water white for June shipment did not develop.

Kerosene stocks on hand are fair but refiners are not pressing sales and competition was not as keen as anticipated.

Cased kerosene was steady but quiet at $1.45 a care for prime and $1.55 a case for 44 water white in bulk cargoes. One of the leading refiners sold 25,000 cases for July shipment to China. A leading Independent refiner was inquiring for 20,000 cases of prime and water white for July shipment to the Orient.

Waxes—New York

Export buyers withdrew from the paraffin wax market last week and this coupled with the slump in the domestic demand brought about a much softer market. It was reported that one refiner was offering abroad at very low prices which was held responsible for the dearth of export orders here. Prices were generally lower.

Stocks here are heavy and domestic buyers are purchasing only as needed. White crude scale 122-124 A.m.p. was freely offered at 2.70 cents a pound without attracting buyers, while fully refined waxes were quoted on a basis of 4 cents a pound for 123-125 and 125-127 A.m.p.

Waxes—Gulf Ports

Although Spanish and South American buyers have been inquiring more actively, there was little export business consummated last week. Chinese buyers were also less active. European buyers are inquiring more actively but stocks are heavy and buyers' ideas are much below those entertained by refiners.

At the close of the week white crude scale 124-126 was offered at 2.70 cents a pound; yellow crude scale 124-126 A.m.p. at 2.60 cents a pound and 124-126 semi-refined at 2.75 cents a pound. Fully refined waxes were quoted at 3⅞ cents for 123-125 and 125-127 A.m.p.; 4 cents for 128-130 A.m.p.; 5⅛ cents for 133-135 A.m.p. and 5½ cents for 135-137 A.m.p.

Bunker Oil—New York

Following the recent reduction in the price of grade C bunker oil to $1.65 a barrel f.o.b. and $1.71½ f.a.s. New York harbor, the demand for spot oil slumped and almost all of the activity was against contracts. The undertone of the market has weakened considerably and there have been rumors current of impending reductions. Diesel oil was also weak at $2.20 a barrel f.o.b. New York harbor refineries and little or no fresh buying developed. Stocks are heavy.

Bunker Oil—Gulf Ports

Grade C bunker oil is offered freely at $1.40 a barrel f.o.b. New Orleans for bunkering purposes and $1.33 a barrel in cargo lots f.o.b. Export demand was very light, although there was an inquiry from the United Kingdom for 45,000 barrels for July shipment.

At Tampico grade C bunker oil was still held at $1.55 a barrel f.o.b. including taxes while no cargo offerings were made. Heavy Panuco crude oil was steady at $1.13 a barrel f.o.b. Tampico taxes to be added.

Lubricating Oils—New York

Export buyers showed a keener interest in the Pennsylvania lubricating oils last week. Small Independent refiners reported numerous

Complete Export Markets

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for years 1924-1925-1926)

New York Export Market

GASOLINE	June 6	May 31
U. S. Motor f. o. b. New York Harbor	8.75 – 9.00	9.00
U. S. Motor cases	24.50	24.40
KEROSENE		
43-45 150 W. W. Bulk Ref.	– 7.00	7.00
41-43 Prime White Bulk Ref.	– 6.75	6.75
43-45 150 W. W. Cases	17.15	17.15
42-44 110 S. W. Cases	16.15	16.15
GAS OIL		
36-40 Bulk Refinery	5.50	5.50
28-34 Bulk Refinery	5.25	5.25
MEXICAN BUNKER OIL		
Grade C. f. o. b. ref. Bulk	–$1.65	–$1.65
Diesel Oil f. o. b. ref. Bulk	–$2.20	–$2.20

LUBRICATING OILS

The following are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (per Gallon in Barrels)		
1 inch Immersion Test; All Penna. Products		
Bright Stock dark	42.00	39.00
Filtered D 600	35.00	32.50
Filtered E 600-Warren	26.75	25.50
Unfiltered 600 s. r.	16.50	17.00
Unfiltered 650 s. r.	19.00	19.00
600 Flash s. r.	23.00	23.00
630 Flash	36.00	35.00
RED ENGINE OILS (Per Gallon in Barrels) (Viscosity at 100°)		
300 Vis. No. 6½ color	22.00	22.00
250 Vis. No. 6 color	21.50	21.50
200 Vis. No. 6 color	20.00	20.00
PALE ENGINE OILS (Per Gallon in Barrels) (Viscosity at 100°)		
230 Vis. No. 3¾ color	26.00	26.00
180 Vis. No. 3¼ color	21.50	21.50
100 Vis. No. 2¼ color	16.75	16.75
MOTOR OILS (Per Gallon in Barrels) (Viscosity at 100°)		
600 No. 6 color	37.00	37.00
500 No. 7 color	36.00	36.00
400 No. 6½ color	33.00	33.00
300 No. 6 color	29.00	29.00
200 No. 3¼ color	23.50	23.50

MEDICINAL OILS (Includes Price of Drums) (Penna Stocks)	June 6		May 31
Domestic 875-.885 s. g.	– .85		– .85
Domestic 865-.870 s. g.	$ .75 – .80		$ .75 – .80
Russian 885-.890 s. g. 325-330 vis.	$0.90	0.95	$1.00 – 1.10

WAXES (Penna Stocks) (In Cents per Pound, F. A. S. Carload Lots)

WHITE CRUDE SCALE (Shipped in Bbls.)		
122-124 A. m. p.	– 2.70	– 3.00
124-126 A. m. p.	– 2.75	– 3.00
FULLY REFINED (Shipped in Burlap Bags)		
123-125 A. m. p. Philadelphia	– 4.00	– 4.125
125-127 A. m. p.	– 4.00	– 4.125
128-130 A. m. p.	– 4.125	– 4.375
130-132 A. m. p.	– 4.375	– 4.625
133-135 A. m. p.	– 5.375	– 5.625
135-137 A. m. p.	– 5.75	– 5.875
YELLOW CRUDE SCALE		
124-126 A. m. p.	– 2.625	– 2.875
PETROLATUMS (Penna Stocks) Per Pound		
Dark Green	– 2.00	– 2.00
Veterinary	– 3.125	– 3.125
Light Amber	– 3.750	– 3.750
Dark Amber	– 3.375	– 3.375
Cream	– 5.75	– 5.75
Lily White	– 7.25	– 7.50
Snow White	–8.375	– 8.50

Gulf Export Market

GASOLINE F. O. B. Gulf Oil Terminals, Texas and Louisiana (Shipments of 20,000 Bbls. and over)	June 6	May 31
U. S. Motor Bulk	– 7.25	7.25 – 7.50
60-62 400 e. p. Bulk	– 7.25	7.25 – 7.50
61-63 390 e. p. Bulk	7.50 – 7.625	7.50 – 7.625
64-66 375 e. p. Bulk	8.25	8.25
U. S. Motor, Cases (cargo lots)	$1.65	$1.65
64-66 Cases (cargo lots)	$1.75	$1.75
KEROSENE		
Water White, 43-45 Bulk	6.125	6.125
Prime White, 41-43 Bulk	5.125	5.125
Water White, cases (cargo lots)	$1.55	$1.55
Prime White, cases (cargo lots)	$1.45	$1.45
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, Bulk*	4.125	4.125
32 plus, bulk, Dark	4.00	4.00
Grade C, Bunker oil	$1.40	$1.55
Cargoes	$1.30	$1.33

*Translucent through neck of a 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS, F. O. B. Steamer	Tampico
Heavy, Panuco crude Taxes to be added $1.13	$1.15
Grade C, Bunker oil, F. O. B. Tampico, For Bunkering Purposes, taxes paid $1.55	$1.55

SOUTH TEXAS (Viscosity at 100° F; cold test 0) (Tanker, F. O. B. Houston)

LUBRICATING OILS	June 6	May 31
100 Vis. No. 2 Unfiltered Pale	6.00	6.50
150 Vis. No. 2½ Unfiltered Pale	8.50	9.00
200 Vis. No. 3 Unfiltered Pale	9.00	9.50
300 Vis. No. 3 Unfiltered Pale	10.00	10.50
500 Vis. No. 3½ Unfiltered Pale	12.50	13.00
200 Vis. No. 5½ Red Oil	8.00	8.00
300 Vis. No. 5½ Red Oil	9.00	9.00
500 Vis. No. 6 Red Oil	10.50	11.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles in Cargo lots)

	June 6	May 31
Gasoline, U. S. Motor—53°-55°	6.00 – 7.00	6.00 – 7.00
Gasoline, U. S. Motor—blends and special cuts	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30°-34° in bbls.	$1.00 – 1.05	$1.00 – 1.05
Diesel Oil, 27°—plus in bbls.	$ .95 – 1.05	$ .95 – 1.05
Bunker Oil, 14°-18° in bbls.	$ .75 – .85	$ .75 – .85
Fuel Oil, 14°-18° in bbls.	$ .70 – .75	$ .70 – .75
Kerosene, W. W. 38°-40°, 125-150 flash (Gals.)	.05 – .06	5 .00 – 6.00
Cased Goods		
Gasoline, U. S. Motor	$2 00 – 2.25	$2.00 – 2.25
Kerosene, W. W. 38°-40°, 125-150 flash	$1.50 – 1.60	$1.50 – 1.60

N. Y. Domestic Market

The following light oil, gas and fuel prices are F. O. B. New York refineries being products made from Domestic (including California) and Mexican Crudes

GASOLINE	June 6	May 31
U. S. Motor tank cars, f.o.b. N. Y. refinery	8.75 – 9.00	8.75 – 9.00
U. S. Motor, tank cars, delivered Greater N. Y.	9.75 –10.00	9.75 –10.00
California U. S. Motor, cargoes, laid down N. Y. cost price	8.00	8.00
Philadelphia, U. S. Motor, tank cars f. o. b. Philadelphia refinery	9.00	9.00
Philadelphia U. S. Motor, tank cars delivered nearby trade	10.00	10.00
KEROSENE		
43-45 150 W. W. Tank Cars delivered greater N. Y.	– 8.00	– 8.00
41-43, Bulk Ref. Prime	– 6.75	6.75 – 7.00
FUEL OILS		
Grade C Bunker f. o. b. N. Y. Ref.	–$1.65	–$1.65
Diesel Oil f. o. b. Refinery	–$2.20	–$2.20
Gas Oil, 36-40, Bulk Refinery	– 5.50	– 5.50
Gas Oil, 28-34, Bulk Refinery	– 5.25	– 5.25
Furnace Oil, 38-42, Bulk Refinery	– 6.50	– 6.50
Furnace Oil from Tank Wagons	–11.00	–11.00

orders from France for lots of 500 barrels of cylinder oils, while German buyers were operating on a larger scale than for several weeks.

Lubricating Oils—Gulf Ports

Demand for zero cold test oils was lighter last week but was nevertheless better than expected. Export buyers are showing more interest in late summer shipments. A South American buyer was inquiring for 15,000 barrels of assorted lubricants for July shipment. Domestic demand is good. Stocks on hand are moderate and refiners are confident that prices will hold fairly steady.

Gas Oil—New York

Gas oil demand lagged last week and prices showed a strong downward tendency with local refiners offering 36-40 at 5½ cents a gallon and 28-34 at 5¼ cents a gallon f.o.b. New York harbor refineries. Export demand was disappointing and the request for barreled as well as bulk gas oil was far below expectation. Domestic consumption is also lighter. There were reports current of price shading but these lacked confirmation.

Gas Oil—Gulf Ports

Gulf refiners reported a more active export inquiry for gas oil in conjunction with gasoline and kerosene but no bulk sales were reported. Prices remained easy at 4 cents a gallon for 32 plus dark oil and 4⅛ to 4¼ cents a gallon for 26-28 red translucent gas oil. Stocks of gas oil are large. Domestic buying has been hand-to-mouth and the general movement was below expectations regardless of the proximity of the heavy cracking season.

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.90
Bradford District Oil in National Transit Lines (Bradford District)	2.90
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.75
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.60
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, 1, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Cil City, K., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.77	Plymouth	$1.33
Lima	1.71	West. Kentucky	1.33
Waterloo	1.35	*Canadian Petro.	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields except that Humble is paying 2c less for each degree of gravity on oil below 28°.

Mirando, Tex.	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Effective May 5

Below 33	$1.05	43-43.9	$1.27
33-33.9	1.07	44-44.9	1.29
34-34.9	1.09	45-45.9	1.31
35-35.9	1.11	46-46.9	1.33
36-36.9	1.13	47-47.9	1.35
37-37.9	1.15	48-48.9	1.37
38-38.9	1.17	49-49.9	1.39
39-39.9	1.19	50-50.9	1.41
40-40.9	1.21	51-51.9	1.43
41-41.9	1.23	52 and above	1.45
42-42.9	1.25		
Corsicana heavy			$1.00

Carter Oil Co.

(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective March 14

Hutchinson, and Carson Counties	$0.95

Gray and Wheeler Counties:

28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS

(Crane, Upton and Crockett Counties)

Humble Oil & Refining Co.

Effective March 14

Below 26	$ .70	31-31.9	$ .82
26-26.9	.72	32-32.9	.84
27-27.9	.74	33-33.9	.86
28-28.9	.76	34-34.9	.88
29-29.9	.78	35-35.9	.90
30-30.9	.80	36 and above	.92

NORTH LOUISIANA — ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.36
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.50
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60

Smackover, below 24	$1.00
do 24 and above	1.25
Bellevue	1.25
Cotton Valley	1.00
**Urania, La.	1.00
†East El Dorado	1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp.

Below 28	$1.00	30-30.9	$1 06
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Seaboard Refiners Expect Better Prices As Motoring Increases

By Special Correspondent

NEW YORK, June 6

WHILE the consumption of gasoline all along the Atlantic seaboard increased last week, the price did not improve much although refiners feel that with a few weeks of good weather prices will strengthen.

On the other hand, four cargoes of California gasoline are afloat for New York. These cargoes were bought at fairly low prices and just what effect they will have on this market remains to be seen. Conditions in California are improving and seaboard buyers who have been anxious to purchase California gasoline reported fewer offerings with refiners asking 6 cents a gallon against recent sales prices of 5½ cents. It is reported that a tanker was chartered at 84 cents a barrel last week.

New York harbor refiners were asking 9 cents a gallon for U. S. Motor gasoline at the refineries and 10 cents in tankcars delivered to the jobbing trade. The same price prevailed at Philadelphia. A little business was transacted at 8¾ cents a gallon at New York harbor terminals but most of the gasoline at this price has been absorbed. Upstate buyers have been purchasing more heavily. With Tulsa refiners asking as high as 7 cents a gallon, there is little coming up here from Oklahoma.

Tankwagon prices were steady and there is less talk of a reduction. Jobbers who have been buying hand-to-mouth the past six weeks are now inquiring for June-July deliveries and sentiment is more optimistic than it has been in over a month.

Gulf refiners also reported a more active domestic demand, reflecting improved weather conditions, and U. S. Motor gasoline was held at 7½ cents a gallon at the refineries and 8½ cents a gallon in tankcars delivered to the nearby trade.

The New York kerosene market was softer last week, owing to the slump in buying. Very few inquiries were reported and stocks are accumulating. Most of the big consumers are buying hand-to-mouth. Prime white 41-43 gravity was held at 6¾ cents à gallon, refinery, and 7¾ cents a gallon in tankcars delivered to nearby consumers, while 43-45 water white was offered at a quarter cent above these prices. Tank wagon prices were weak.

Gulf refiners reported a slump in domestic buying. Consumption is falling and competition among refiners was keener. Prime white 41-43 gravity was more freely offered at 5½ cents a gallon, refinery, and 6½ cents a gallon in tankcars delivered to the nearby trade.

Purchasers, in All Fields (in Effect, June 6, 1927)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

(Effective March 14)

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co. and Midwest Refining Co.

(Salt Creek prices effective March 12)

‡Salt Creek	29-29.9	$1.14
" "	30-30.9	1.16
" "	31-31.9	1.18
" "	32-32.9	1.20
" "	33-33.9	1.22
" "	34-34.9	1.24
" "	35-35.9	1.26
" "	36-36.9	1.28
" "	37 and above	1.30
Elk Basin		1.33
Grass Creek light		1.33
Big Muddy		$1.25
Lance Creek		1.33
Rock Creek		1.25
Mule Creek		1.30
Rex Lake		1.10
‡Osage		1.33
‡Cat Creek, Mont.		1.33
Sunburst, Mont.		1.35
‡Hogback, N. Mex.		1.38
Artesia, N. Mex.		1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Ingelwood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.78	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	....	.79	.79	.77	.81	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	....	.81	.81	.78	.85	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	....	.83	.83	.79	.89	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	$ .85	.85	.80	.93	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.85	.87	.87	.81	.97	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.85	.89	.89	.83	1.01	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.85	.91	.91	.85	1.05	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.86	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.87	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.88	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.89	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.91	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.93	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	.95	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	.97	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	.99	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.01	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.03	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.06	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	1.09	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	1.12	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	1.15	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	June 6	May 31
Soda Ash light 58% bags, cwt.	$1.325	–$1.325
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Sal Soda wks.	$0.90–$1.10	1.10
Caustic Soda 76% solid cwt.	$3.00	3.00
Chloride of Lime, cwt. works	$2.00	2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point, per ton	$10.50–11.00	10.50–11.00
Liquid Chlorine tank cars works, lb.	4	4

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads spot, lb.	11.3	11.1
June	11.3	11.1
Tanks spot	10.5	10.3
*Soya Bean Tanks, Coast, lb.	9.50	9.50
Castor Oil—		
No. 1 Carlots, Bbls.	13.50	13.50
No. 3 Carlots, Bbls.	13.00	13.00
Animal Oils—		
English Degras	5.375	5.375
Domestic Degras, bbls., carloads, lb.	4.50	4.50
Oleic Acid—		
Dist. Bbls., lb.	9.25	9.25
Saponified Bbls., lb.	9.50	9.50
Lard Oils—		
Prime Winter Strained 2 to 1½ ffa. 40-45c.t.lb.	14.875	14.875
Extra Winter Strained 2 to 4½ ffa. 40-45c.t.lb.	12.75	12.75
Extra 4 to 5 ffa. 40-45c.t.lb.	11.875	11.875
Extra No. 1 7 to 10 ffa. 40-59c.t.lb.	11.375	11.375
No. 1 15 to 18 ffa. 40-45c.t.lb.	10.50	10.50
No. 2 22 to 23 ffa. 40-45c.t.lb.	10.00	10.00
Prime Edible Tallow under 1⅞ ffa. 40-45c.t.N.Y., lb.	8.375	8.375
Tallow acidless, lb.	10.75	10.625
Lard Stearine, lb.	15.00	15.00
Oleo Stearine, lb.	9.75	9.625
Neatsfoot Oil—		
Pure, bbls.-lb.	13.25	– 13.25
Extra, bbls.-lb.	11.375	11.375
No. 1, bbls.-lb.	10.25	10.25
Cold pressed, lb.	17.75	17.75
Fish Oils—		
Menhaden Oil		
Light pressed, gal.	60	60
White, gal.	66	66
Yellow bleached, gal.	64	64
Whale, extra winter bleached, gal.	82	82
Naval Stores—		
Turpentine, N. Y., gal.	62	62
Turpentine†, gal.	54½	56
Rosin, B. N. Y.	$10.10	$10.00
Rosin, F. N. Y., bbl.	$10.15	$10.55
Rosin, B†, bbl.	$ 8.60	$ 8.50
Rosin, F†, bbl.	$ 8.65	$ 9.05
Rosin Oil 1st run, gal.	57	57
Rosin Oil 2nd run, gal.	62	62
Pine Tar—		
Kiln Burnt, bbl.	$16.00	$16.00
Retort, bbl.	$16.00	$16.00
Alcohol—Denatured—		
Formula 5		
Bbls., gal.	50.5	50.5
Drums, gal.	43.5	43.5

†Savannah, Ga., market.
*Nominal.

OIL STOCKS AND FINANCES

National Petroleum News

Phillips' Production Increases But Net Earnings Recede

CLEVELAND, June 4.

FRANK PHILLIPS, president, Phillips Petroleum Co., in his letter to bankers in connection with his company's issue of $40,000,000 5¼ per cent sinking fund gold debentures, said the company has approximately 75,000 barrels gross crude production and 55,000 barrels net production. Its daily average natural gasoline output was approximately 500,000 gallons a day, the largest output of this commodity by any one company.

With the purchase of control of the Oklahoma Natural Gas Corp. the company becomes the largest gas utility in Oklahoma, supplying at either retail or wholesale Tulsa, Oklahoma City, Muskogee, Okmulgee, Sapulpa, Shawnee, Guthrie, El Reno and Norman.

Proceeds from the sale of debentures which mature June 1, 1939, are to be used to pay for Oklahoma Natural Gas Corp. stock, development of properties and to provide additional working capital. The debentures were offered the public at 99.25 to yield 5.33 per cent.

In the last five years net earnings of the company, Mr. Phillips wrote, averaged $11,822,498 after depreciation and depletion but before federal taxes and interest.

"While earnings in the first quarter of 1927 were in excess of those for the corresponding quarter of 1926," Mr. Phillips wrote, "more recent earnings reflect the present condition of overproduction in the oil industry which in my opinion is in the process of correction."

Of $93,600,000 net profits in five years $19,200,000 was distributed as cash dividends and $74,400,000 was returned to the business. Of the latter amount $43,500,000 was appropriated to depreciation and depletion reserves, Mr. Phillips wrote.

Phillips net income in 1926 after all reserves, interest and federal income taxes amounted to $21,407,708 or $8.89 a share on 2,407,082 no par shares outstanding last year, compared with $12,329,623 or $6.46 a share on 1,906,936 shares outstanding in 1925. Condensed consolidated income accounts for the last two years follows:

	1926	1925
Gross income	$57,838,369	$35,770,893
Operating expense	15,202,700	9,807,218
General expense, etc.	4,455,134	2,652,062
Interest, taxes	3,139,570	2,068,553
Deprec., deplet.	13,633,257	8,913,437
Net profits	$21,407,708	$12,329,623
Dividends	7,218,408	4,630,207
Surplus	$14,189,300	$ 7,699,416

Phillips' net crude production was 61 per cent more last year than in 1925 and natural gasoline production was 35 per cent more. A comparison of property and operating statistics for 1925 and 1926 follows:

	1926	1925
OIL DIVISION:		
Daily average gross crude production, bbls.	55,023	29,896
Daily average net crude production, bbls.	41,365	25,744
Producing properties end of year	399	287
Producing oil wells end of year	2,293	1,759
Producing acreage end of year	61,788	43,306
GASOLINE DIVISION:		
Daily average net production, gals.	443,382	328,362
Gasoline plants end of year	41	31
Daily average gas processed, M. cu. ft.	232,353	205,696
Gasoline gas producing acreage	178,000	100,000
GAS DIVISION:		
Daily average gas sales, M. cu. ft.	186,365	161,058
Gas booster stations end of year	14	11
TRAFFIC DIVISION:		
Insulated tank cars owned	1,313	825
Total tank cars in operation	2,960	1,676
Carloads of products and material handled	48,622	29,822

In his letter to stockholders, Mr. Phillips said of 1926 operations:

"The number of producing properties increased from 287 covering 43,306 acres with 1,759 wells to 399 consisting of 61,788 acres with 2,293 producing wells. Total lands under lease increased from 588,448 acres to 655,994 acres. Gross production for the year was 20,083,266 barrels, a daily average of 55,023 barrels; and net production after deducting royalty and partnership interests, was 15,098,132 barrels, a daily average of 41,365 barrels, compared with a daily average of 25,744 barrels in 1925. Net daily average production at the end of the year was materially in excess of the year's daily average. Crude stocks were reduced by 2,094,554 barrels, leaving an inventory of 2,690,022 barrels Dec. 31, 1926.

"At the end of the year, there were 38 permanent and three auxiliary gasoline plants, an increase of 10 plants during the year. There also were two permanent and two auxiliary plants under construction. Total gas used in 1926 was 92,494,739,000 cubic feet. There was an increase of 13 per cent in gas processed and an increase of 35 per cent in amount of gasoline recovered. The percentage of gasoline recovery is steadily increasing with the age of the company's plants. Net production in 1926 was 161,834,610 gallons."

The consolidated balance sheet of Dec. 31 shows current assets 2 to 1 over current liabilities. The balance sheet compare:

ASSETS	1926	1925
Property	$146,413,076	$107,237,939
Acc'ts, notes rec.	5,809,741	4,309,572
Inventories	8,737,656	10,291,275
Prepaid expense	643,626	358,178
Cash	4,424,176	7,222,633
Due on stk. warrants	6,299	
Deferred charges	240,352	413,156
Total	$166,274,927	$129,832,753
LIABILITIES		
Capital, surplus	$105,367,160	$ 91,177,860
Purchase oblig.	3,449,388	282,087
Notes payable	5,739,693	187,884
Accounts payable	1,821,466	1,206,920
Dividends pay.	1,805,312	1,805,312
Deprec., deplt., res.	45,214,987	33,491,536
Contingent, tax res.	2,876,921	1,581,155
Total	$166,274,927	$129,832,753

Cleveland Stock Market

June 3

	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	.....	.....	110
do pfd.	100	100½	100½	100
Fred G. Clark Co.	10	.....	4	3⅜
National Refining Co.	25	36½	37¼	37
do pfd.	100	130	.....	132½
Paragon Refining Co.	25	6⅜	.....	7
do pfd.	100	66½	.....	66¾

x Ex dividend.

Oil Dividends

	Amount	Payable	Stock of Record
Barnsdall A & B q.	62½c	July 15	June 24
Mountain Prod. q.	65c	July 1	June 15
Pennok Oil q.	25c	June 25	June 15
Pure Oil 5¼% pfd. q	$1.25	July 1	June 10
do 6% pfd. q.	$1.50	July 1	June 10
do 8% pfd. q.	$2	July 1	June 10
S. O. Kentucky q.	$1	June 30	June 15
Tide Water q.	20c	June 30	June 11
Warner-Quinlan q.	50c	July 2	June 15

Mexican Seaboard Oil Co.—All directors reelected at annual meeting.

Standard Oil Co. of Indiana—Price of stock for employes stock purchase plan in second quarter of 1927 has been fixed at $68 a share.

Transactions In Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low		Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended June 4 Sales	First	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	(sh)	915,675	N.P.	Amerada Corp.	50cQ	Apr. 30, 27	21,300	32¼	33⅜	30⅝	32½	— ⅜
74	39⅞	60½	35½	(sh)	209,180	N.P.	American Republics			500	44½	44½	44	44	— ½
59½	44¾	50¼	44⅛	$	56,000,000	$25	Associated Oil	50cQ	Mar. 25, 27						
128⅜	97	117⅞	107		50,000,000	100	Atlantic Refining	$1Q	June 15, 27	5,200	112	112¾	110½	111¾	— ¼
120	115½	118	115½		20,000,000	100	do pfd.	$1¾Q	May 2, 27	100	116½	116½	116½	116½	— ½
33½	23½	35½	23⅜		25,000,000	25	Barnsdall Corp. A	62½cQ	Apr. 5, 27	6,800	26½	26¾	25½	25⅝	— 1⅛
29½	22⅛	32¼	22		3,840,275	25	do B	62½cQ	Apr. 5, 27	300	26	26½	26	26⅜	— ⅛
68⅛	29¾	32⅞	21½		49,505,175	25	California Petroleum	50cQ	June 1, 27	4,400	24¾	24¾	24⅛	24⅛	— ½
94¼	50	96¾	72½		24,242,500	100	General Asphalt			10,100	76⅞	79	75¼	76½	+ ½
140½	94⅞	144⅞	113		6,949,200	100	do pfd	$1¼Q	June 1, 27	500	119	119	118¾	118¾	+ 1¾
72	50¼	159	60⅛		25,000,000	100	Houston Oil			87,000	139⅛	*159	138⅝	159	+20⅛
84	19⅝	32¾	17⅝	(sh)	500,000	N.P.	Independent Oil & Gas	25cQ	Apr. 18, 27	3,100	19¼	19¼	18⅝	18¾	— ⅝
13¾	7¼	11½	7½	$	3,280,340	$10	Indian Refining		Dec. 15, 20	300	8⅜	8⅝	8⅜	8⅝	+ ⅛
12½	8	10⅞	7⅜		4,550,110	10	do ctfs.			500	....	8⅜	8	8	— ½
104	90	112	102		2,296,400	100	do pfd.		Dec. 15, 21						
24½	19⅛	32½	20½	(sh)	3,988,044	N.P.	Lago Oil & Transport	75cQ	May 1, 27	1,100	27	27	26⅝	26⅝	— ⅝
19⅞	12	18⅜	11½	(sh)	1,135,662	N.P.	Louisiana Oil Refining			8,400	12⅛	12⅛	†11½	11½	— ½
98	93	97	90	$	4,000,000	$100	do pfd.	$1⅝Q	May 16, 27	200	91½	91½	91½	91½	— ¼
28⅞	16½	22¾	13¼	(sh)	330,000	N.P.	Maracaibo Oil			600	13⅞	14½	13⅞	14	— ½
63⅜	49¼	58½	36	(sh)	2,308,064	N.P.	Marland Oil Co.	$1Q	Mar. 31, 27	62,500	37⅞	38⅝	36½	36¾	— 2
250	225	225	200	$	45,942,800	$100	Mexican Petroleum	$3Q	Apr. 20, 27	90	225	*225	225	225	+25
....	....	....	....		12,000,000	100	do pfd.	$2Q	Apr. 20, 27						
13¾	6	9¼	5	(sh)	945,939	N.P.	Mexican Seaboard		Nov. 15, 24	100	5½	5½	5½	5½	0
37	27½	39⅝	29	(sh)	1,357,800	N.P.	Mid-Continent Petroleum	75cQ	May 1, 27	3,500	31	31¼	30⅝	30¾	— ½
104¼	90	105	97	$	6,718,000	$100	do pfd.	$1¾Q	June 1, 27						
2½	¾	3¼	1⅝		24,726,130	10	Middle States		July 1, 23	1,000	2¾	2⅞	2½	2⅝	0
1⅜	½	2¼	1⅛		5,074,090	...	do ctfs			600	2	2	1¾	1¾	— ¼
2¼	1	1⅞	1	(sh)	3,500,000	N.P.	Pacific Oil			2,500	1¼	1¼	1⅛	1⅛	— ⅛
76½	56½	65⅞	56¼	$	48,307,400	$ 50	Pan American P. & T.	$1.50Q	Apr. 20, 27	2,400	57⅝	58	57	57	— ⅝
78⅜	56⅞	66¾	56⅜		121,096,950	50	do B	$1.50Q	Apr. 20, 27	13,900	58⅞	58⅞	57¼	57½	— 1
46	30	37⅞	19	(sh)	400,000	N.P.	Pan American Western B.		Jan. 30, 27	700	20⅝	20⅝	20	20	— 1
62	4½	18⅞	8	(sh)	198,770	N.P.	Panhandle P. & R.			500	9½	9½	9½	9½	0
99⅜	51	83¾	68½	$	2,935,200	$100	do pfd.		July 2, 23						
57⅜	40	60¼	39¾	(sh)	2,406,796	N.P.	Phillips Petroleum	75cQ	Apr. 1, 27	46,000	44⅞	44⅞	43¼	43⅝	— 1¼
1⅞	½	¾	½	$	29,622,925	$ 25	Pierce Oil Corp.			800	½	⅝	½	½	0
27⅛	11⅓	20	13½		15,000,000	100	do pfd.		Feb. 1, 22	200	20	20	18½	18½	— 1½
7	2¼	3⅞	2½	(sh)	2,500,000	N.P.	Pierce Petroleum			4,400	3⅜	3⅜	3¼	3⅜	+ ⅛
20¾	11	33⅞	16¾	$	11.467,850	$50	Producers & Refiners		Sept. 15, 23	25,500	30⅝	31⅛	28½	28⅝	— 1⅜
41¾	30¾	50	36⅞		2,845,350	50	do pfd.		May 1, 25	650	46	46	43¾	45	0
31	25¼	33½	26		75,929,250	25	Pure Oil Co.	37½cQ	June 1, 27	16,900	27	27	26⅛	26¼	— ⅝
112¾	106	114	111⅜		13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 27						
57⅜	47⅜	58	48½	(sh)	628,559	13.40	Royal Dutch, N. Y. shares	$133¼	Jan. 28, 27	2,900	49¾	49⅞	48⅞	49	— ⅝
40⅝	40½	47⅞	43⅜	(sh)	83,152	F2	Shell Transport & T	96.7c	Jan. 17, 27						
31	24	31¾	25	(sh)	10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 27	3,800	28	28	27½	27⅝	0
114	103	111	107½	$	18,350,400	$100	do pfd.	$1½Q	May 16, 27						
28⅝	15⅛	22¾	15¾		7,208,080	10	Simms Petroleum	37½cQ	Apr. 1, 27	1,300	16⅜	16½	16¼	16¼	— ¼
24⅞	16¾	22⅜	16½	(sh)	4,501,224	N.P.	Sinclair Consolidated		May 31, 24	16,100	17¼	17¼	16⅞	17	— ⅜
99½	90	103¼	97	$	17,210,000	$100	do pfd.	$2Q	May 16, 27	200	99½	99½	99	99	— ½
37¼	26⅜	37⅜	25		27,398,500	25	Skelly Oil Co.	50cQ	June 15, 27	5,600	27⅝	27¾	27¼	27¼	0
63⅝	52⅝	60¾	50⅜	(sh)	13,016,434	N.P.	S. O. California	62½cQ	June 15, 27	13,100	54	54¾	53½	53¾	— ⅛
46⅜	37⅜	41⅜	35⅛	$	604,484,600	$25	S. O. New Jersey	25cQ	June 15, 27	15,300	37⅛	37¼	36⅝	36⅞	— ⅜
33¼	32½	34⅛	30⅛		421,498,275	25	S. O. New York	40cQ	June 15, 27	24,100	30⅝	30⅝	30⅜	30½	0
41⅝	30⅛	34⅞	30	(sh)	1,171,474	N.P.	Sun Oil	25cQ	June 15, 27	1,000	31½	31½	31	31	+ 4
5¼	1	6½	3¾	(sh)	1,121,368	N.P.	Superior Oil Corp.		Dec. 20, 20	1,900	4¼	4¼	4	4	— ⅛
57⅞	53⅛	58	45	$	179,752,525	25	The Texas Corp.	75cQ	Apr. 1, 27	23,000	48⅛	48⅝	47½	47⅞	+ ⅜
19½	12	16⅜	12		8,380,340	10	Texas Pacific Coal & Oil	15cQ	Mar. 31, 27	5,800	12¾	12¾	12⅛	12¼	— ⅛
39¼	37	29⅛	22⅞	(sh)	2,157,991	N.P.	Tide Water Oil Co.	37½cQ	Mar. 31, 27	1,200	22⅞	23½	22⅞	23	0
103	87¼	89¾	87	$	20,705,100	$100	do 5% pfd.	$1.25Q	May 16, 27	600	88	88	88	88	+ ⅛
....	....	17½	15½	(sh)	4,791,410	N.P.	Tide Water Associated	30cQ	May 2, 27	14,000	16¼	16½	†15½	16½	+ ⅛
....	....	90¾	90	$	76,347,100	$100	do pfd. new	$1.50Q	Apr. 1, 27	2,000	90½	*90¾	90	90⅝	+ ⅛
5½	3	6	3¾	(sh)	3,742,029	N.P.	Transcontinental Oil			46,800	6	6	5¼	5¼	— ⅛
58⅜	37¼	56½	39⅝	$	40,741,725	$ 25	Union Oil of California	50cQ	May 10, 27	2,300	43⅝	43⅝	42¼	42½	— 1
120⅜	84¼	112¾	94		30,734,000	100	Union Tank Car Co.	$1¼Q	June 1, 27	700	109	109½	108½	108½	— 1
29¾	25⅛	27½	22	(sh)	490.000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 27	400	24	24	23½	23½	— ½

*New High †New Low xEx-Dividend FAlso extras

NEW YORK BONDS

Week Ending June 3

	High	Low	Last	Ch'ge
Amer. Rep. Deb. 6s	99¾	99½	99¾	+ ½
Assoc. Oil gold 6s	102½	102½	102½	0
Atlantic Refg. Deb. 5s...	101½	101	101	— ¼
Barnsdall Corp. 6s.....	100¼	99⅜	99¾	+ ½
Barnsdall Corp. 6s ex war.	91	90⅝	90⅝	— ¼
Cal. Petrol. 5s.....	93¾	93	93	— ¼
Cal. Petrol. 5½s.....	98¼	97¾	98	0
Empire Gas & Fuel 7½s.	109⅞	109½	109⅞	+18
Empire Gas & Fuel 6½s.	105½	105	105¼	0
Gen. Petroleum 5s.....	101	100⅝	100¾	0
Humble Oil & Refg. 5½s	102½	102	102½	+ ⅝
Humble Oil 5s wi.....	98¼	98	98¼	0
Mid-Cont. Pet. 6½s....	104¼	104	104¼	+ ⅛
Pan.Amer. P & T 7s....	105¼	105¼	105¼	+1⅛
Pan-Amer. P & T 6s....	94	93⅜	93⅜	— ⅝
Prod. & Refnrs. 8s ex war.	113½	113½	113½	0
Prod. & Refnrs. 8s.....	111¼	111¼	111¼	0
Simms Pet. cvt. 6s.....	98⅞	98¼	98¼	—2
Sinclair Con. Oil Col. 7s.	100⅛	99⅞	99⅞	+2
Sinclair Con. Oil Con. 6½s	96¾	95½	96⅜	+ ⅜
Sinclair Con. Oil 6s.....	100	99⅞	99⅞	— ½
Sinclair Crude Oil 6s....	100	99⅞	99⅞	— ⅛
Sinclair Pipe Line sf 5s..	93¾	93¾	93¾	+ ½
Standard Oil N. Y. 4½s.	94⅜	94¼	94⅜	— ⅛
Standard Oil N. J. deb. 5s	102⅜	102	102¼	+ ¼
Superior Oil 7s.....	101¾	101¾	101¾	0
Union Oil of Cal. 6s-A...	108	108	108	+ ½
Union Oil of Cal. 1st 5s..	101½	101½	101½	— ¼
Union Oil of Cal. 5s-C...	98½	97¾	98½	— ⅛

Barnsdall Corp.—New York reports are that plans are under way for altering capital structure to have one class of stock replace present A and B classes. Present authorized capital consists of 1,000,000 shares of A voting stock and 3,000,000 shares of B non-voting. Shares are $25 par.

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended June 3 Sales	First	High	Low	Last	Ch'ge
8½	6⅝	....	....	N.P.	Andes Petroleum....	....	....	....	....	....	....
8½	5¾	8¼	6⅞	$ 10	Arkansas Nat. Gas..	2,050	7	7⅜	7	7¼	+ ¼
90½	79¾	98⅝	84	100	Columbia Gas.....	40	98⅝	*98⅝	96	96	+ 1
101⅜	95	107	100	100	do pfd.....	15	107	107	107	107	0
17	12½	15	9½	10	Devonian Oil.....	40	10½	10½	10½	10½	0
116½	112	116¾	115	100	Duquesne Lt. 7% pfd.	150	116¼	116¼	116¼	116¼	— ½
10	5⅛	12¼	6	N.P.	Houston Gulf Gas..	130	10⅞	11¼	10⅞	11¼	+ ¼
46	39	46¼	37¼	$ 25	Lone Star Gas.....	6,609	43¾	44⅜	43¾	43⅞	+ ⅜
47⅜	33⅛	22¾	22¼	25	Ohio Fuel Corp.....	....	....	....	....	....	....
47½	42	21⅝	21	....	do ctfs.....	....	....	....	....	....	....
6¾	5	6	5	....	Ohio Oil & Gas.....	....	....	....	....	....	....
34	21	21	21	25	Oklahoma Nat. Gas.	435	23¼	23¼	23¼	23¼	— ⅜
21	19¼	23⅝	20¼	....	do ctfs.....	....	....	....	....	....	....
5⅜	3⅛	3⅞	3¼	5	Pittsburgh Oil & Gas	200	3¼	3¼	3¼	3¼	0
10	7½	8	6	10	Salt Creek Cons.....	172	6	6¼	6	6¼	0
27	8	26½	17	10	Tidal Osage.....	....	....	....	....	....	....
45	40	43	41	N.P.	Waverly Oil Wks. "A"	90	42	42	42	42	0

*New high †New high record

PITTSBURGH CURB EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended June 3 Sales	First	High	Low	Last	Ch'ge
3⅜	2½	3½	2¾	$ 5	Columbia Synd.....	.....	....	....	....	....	.....
20	.06	.18	.18	5	Duquesne Oil.....	.....	....	....	....	....	.....
22	22	....	....	10	Forest Oil.....	.....	....	....	....	....	.....
91½	85	94	88	25	Gulf Oil Corp.....	.....	....	....	....	....	.....
79	79	105	93	100	Houston Gulf Gas pfd	.....	....	....	....	....	.....
12	7½	10¾	6¼	N.P.	Leonard Oil & Dev...	1,000	7	7	7	7	— ¾
1⅝	1⅝	....	....	N.P.	Mountain & Gulf....	.....	....	....	....	....	.....
30¼	29	32	31¼	$ 25	Oklahoma Gas.....	.....	....	....	....	....	.....
....	....	1.20	1.00	....	Oklahoma Eastern...	.....	....	....	....	....	.....
2	.15	2.70	1.10	10	Omar Oil & Gas.....	1,500	1.70	1.75	1.65	1.65	0
....	....	2¼	1¾	....	Pittsburgh Oil Dev..	.....	....	....	....	....	.....
2	1¾	2¼	2¼	5	do pfd.....	.....	....	....	....	....	.....
33½	20	31	24	10	Plymouth Oil.....	100	25	25	25	25	0
7	3	6	5½	5	States Oil.....	.....	....	....	....	....	.....
3½	2	3⅛	2⅛	1	Texon Oil & Land....	400	2⅛	2⅛	2⅛	2⅛	— ¾
25¾	8	23¾	18	10	TidalOsage(non-vtg).	.....	....	....	....	....	.....

†New High Record xEx-Dividend ‡Ex-Rights

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended June 3 Sales	First	High	Low	Last	Ch'ge
21	16⅜	21⅝	18¾	£ 4,000,000	£ 1	Anglo-American Oil	36⅜cS.A.	Jan. 4, 27	500	19¼	19¼	†18⅜	18⅜	— ⅞
20¼	16½	20½	17⅞	.....	£ 1	do ctfs. non-voting	.....	.....	100	18½	18½	18½	18½	— ⅜
2¼	.75	1¼	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	1	1	1	1	+ ¼
5	2⅞	4¼	2½	$ 10,000,000	$ 10	do pfd.	.....	.....	100	2½	2½	†2½	2½	— ¼
75	65	69	50	1,000,000	25	Borne Scrymser	$1S.A.	Apr. 15, 27	.....	.....	.....	.....	.....	.....
59½	42	58	45	10,000,000	50	Buckeye Pipe Line	$1Q	June 15, 27	350	57½	57½	55½	55½	— 2
82½	65	105	76½	3,000,000	25	Chesebrough Mfg.	$1Q	Mar. 31, 27	1,500	95¾	*105	95¾	103	+ 6½
25⅞	17½	22⅝	17⅜	38,805,260	10	Continental Oil	25cQ	June 15, 27	9,200	17¾	17¾	17½	17⅝	0
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	June 15, 27	150	92	92	92	92	— 2
63¾	43	56¼	47	5,000,000	100	Eureka Pipe Line	$1Q	May 2, 27	50	56	56	56	56	— ¼
32½	9⅛	13½	7½	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	....	8	†7½	7½	— 1
94½	35	59¾	35	4,000,000	100	do new pfd.	.....	June 30, 26	25	35	35	†35	35	0
97½	40	60⅛	45	2,000,000	100	do old pfd.	.....	June 30, 26	90	45	45	†45	45	— 3½
99⅝	52	62¾	54	73,117,577	25	Humble Oil & Refining	30cQ	Apr. 1, 27	8,600	56	57⅝	56	56½	0
144½	125¼	150	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 26	250	139¾	140½	139¾	140	0
39¾	32½	47	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	25cQ	June 1, 27	3,300	43⅜	43½	42¾	43¼	+ ⅛
70	54¼	72½	61	$ 5,000,000	$50	Indiana Pipe Line	$1Q.	May 14, 27	800	69	69⅛	67½	67½	— 1
35¼	28⅜	34⅞	28½	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 15, 26	9,200	30⅜	30⅜	29½	29½	0
20¾	12½	17	13½	$ 6,362,500	$12½	National Transit Co.	25cQ	June 15, 27	900	16¾	16¾	16⅛	16⅛	0
51½	27⅛	36	31¼	5,000,000	100	New York Transit	.....	July 15, 26	.....	.....	.....	.....	.....	.....
80½	64	87½	70	4,000,000	100	Northern Pipe Line	$3S.A.	Jan. 1, 27	450	84¼	*87½	84¼	87	+ 2½
67⅜	55¾	64¾	52	60,000,000	25	Ohio Oil Co.	50cQ	June 15, 27	2,000	57¼	57½	56½	56½	0
24¾	15	23⅞	12	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	2,900	20	*23⅞	19	23½	+ 2⅛
60¼	48	55½	45⅝	60,000,000	25	Prairie Oil & Gas	50cQ	May 31, 27	2,800	47½	48	47¼	47⅝	— ⅜
137½	122¼	165½	132	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 27	2,050	162	164¾	160¾	164¾	+ 1¾
220	184½	201½	180	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 26	10	183	183	183	183	0
27	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	100	19	19	19	19	0
50	34½	41½	34½	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 27	800	35½	35½	35⅛	35⅜	+ ⅜
57	49	77	55½	3,500,000	100	South West Pa. Pipe Lines	$1Q	Apr. 1, 27	50	72	72	72	72	— 3
70½	60½	74¼	64¾	228,415,463	25	S. O. Indiana	62½cQ	June 15, 27	16,300	67¼	67¾	66⅞	67	— ½
36½	16½	20⅝	15⅝	8,000,000	25	S. O. Kansas	.....	June 16, 24	400	16½	16½	16⅛	16¼	— ½
134¾	108	122¼	112	17,012,599	25	S. O. Kentucky	$1Q	Mar. 31, 27	800	114	114	112	113¼	0
51⅛	42	49½	45	4,559,850	25	S. O. Nebraska	63cQ	Mar. 21, 27	300	45½	45½	†45	45	0
672	288	86	73	14,000,000	25	S. O. Ohio	$2½Q	Apr. 1, 27	500	75½	76	74½	74½	— ⅜
120½	116½	122	117¼	7,000,000	100	do pfd.	$1¾Q	June 1, 27	30	119	119	119	119	0
23	15½	17⅝	14½	861,466	25	Swan Finch Co.	.....	Nov. 1, 19	200	16	16½	16	16¼	+ 1
109¾	90¼	127	95⅛	62,470,809	25	Vacuum Oil	50cQ	Mar. 19, 27	9,500	123¾	*127	121½	127	+ 3¼

Shaffer Oil & Refining Co.—June 1 $527,100 principal amount of first mortgage convertible 6% sinking fund gold bonds was retired at 102.

STANDARD
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ISSUES

New
Statistical Circular

PIPE LINE COMPANIES

Copy upon request

CARL H. PFORZHEIMER & CO.

Specialists in Standard Oil and Miscellaneous Oil Securities

25 Broad Street **New York**

New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended June 3 Sales	First	High	Low	Last	Change
6¾	45	2⅞	.76	$5	Amer. Con. Oilfields	4,000	80	83	78	83	0
14½	4	7½	4	N.P.	Amer. Maracaibo	1,600	4⅛	4¼	4	4⅛	0
8⅜	5¾	8⅜	6¾	$10	Arkansas Nat. Gas.	100	7⅜	7⅜	7⅜	7⅜	0
20⅜	14⅛	20½	15½	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
85¼	60	27	20½	N.P.	British American	300	....	26½	26	26	— ¼
28⅜	9¼	28¼	14⅜	25c	Carib Syndicate	2,600	15¼	16¼	15	15¾	0
.....	.....	26	16½	....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	8,000	46	46⅜	45¾	46	— ¾
92½	82⅜	92¼	87	100	do pfd.	1,000	90⅜	90½	89⅞	89⅞	0
8⅜	7⅜	8½	7⅜	10	do pref. B.	100	8¼	8¼	8¼	8¼	— ⅛
25¼	19	29¼	23½	10	do bankers' shares	.....	.....	.....	.....	.....	.....
3½	1¾	3⅛	1¾	$1	Colombia Syndicate	6,064	2⅛	2¼	2	2	— ¼
10⅛	8⅛	9½	8¼	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
16	10	14⅞	9⅞	N.P.	Creole Syndicate	21,300	10⅞	10⅞	†9⅞	10⅛	— ¾
7⅜	1⅛	3	1	N.P.	Crown Central	300	1⅜	1⅜	1⅜	1⅜	+ ⅜
8½	½	12	4¾	....	Darby Petroleum	100	6⅝	6⅝	6⅝	6⅝	— ⅜
....	....	11½	7	.....	do trust ctfs.	100	7	7	†7	7	— 2
4	1¾	2½	1¼	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	13	16¾	10	N.P.	do pfd.	400	10	10	10	10	— 1
7½	2½	3¾	1⅝	N.P.	Gibson Oil	10,700	1⅞	1⅞	1⅝	1¾	0
2	.63	1⅜	40	N.P.	Gilliand ctfs.	100	50	50	50	50	0
98	82	96½	86¼	$25	Gulf Oil Corp.	2,500	89¾	89⅞	89	89	0
3⅜	1	2¼	1¾	N.P.	Kirby Petroleum	300	1½	1½	1½	1½	0
12¼	5¾	10⅞	6	N.P.	Leonard Oil & Dev.	4,000	6⅞	7½	6¼	7⅜	0
27	20	27½	22	N.P.	Lion Oil & Refg.	800	22⅝	23½	22⅝	23½	0
46	31	46½	37	$25	Lone Star Gas	900	44	44⅛	43½	43½	0
2¾	2	2⅞	1¼	1	Magdalena Synd.	4,200	1⅜	1⅜	1¼	1¼	0
5½	1⅞	3	1½	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¼	1½	1¼	1	Mountain & Gulf	1,600	1⅜	1⅜	1¼	1¼	— ⅛
26	23	26⅞	22¾	10	Mountain Producers	3,200	24½	24¾	24½	24¾	+ ⅛
6¾	5	5⅞	4⅞	5	New Bradford	400	5⅛	5¼	5	5	— ⅛
11¾	2	6¼	4	10	New England Fuel	.....	.....	.....	.....	.....	.....
17	9⅛	13¾	9¼	1	New Mex. & Ariz.	18,400	11¼	13	11¼	12⅝	+ ⅛
17	8	13	9	25	New York Oil	3,600	12	*13	12	12¼	+ ⅛
12⅛	8¾	12⅝	11⅛	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
44¾	33	....	....	$25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
33	28½	27½	21¼	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
10⅛	5⅞	9⅜	5	N.P.	Pandem	600	5¼	5¼	5	5¼	0
12⅛	11¾	12⅛	9¾	N.P.	Pantapec Oil	1,600	10¼	10¼	†9¾	9¾	— ¼
2¾	.20	.37	.26	N.P.	Peer Oil Corp.	.....	.....	.....	.....	.....	.....
22¾	12	13½	7½	$10	Pennok Oil	900	8¼	8¼	†7½	7½	0
38	14⅛	24⅜	16	25	Red Bank Oil	100	16	16	16	16	0
30¼	12	15½	5	N.P.	Reiter-Foster	1,200	5⅝	5⅞	5⅛	5½	— ⅜
27½	22	27½	15	$25	Richfield Oil	400	19⅞	19⅞	19⅞	19⅞	— ⅛
7½	4½	7	4½	N.P.	Ryan Consolidated	500	....	4⅝	4½	4½	0
10	7½	8	6	$10	Salt Creek Cons.	900	6½	6½	6½	6½	0
36	26⅞	32	27¼	10	Salt Creek Prod.	1,200	29	29¼	29	29⅛	0
4⅜	1⅛	7	3	5	Savoy Oil	.....	.....	.....	.....	.....	.....
27	7⅝	26½	17	10	Tidal Osage	.....	.....	.....	.....	.....	.....
25¾	7⅝	23¾	15	10	do non-voting	100	19	19	19	19	+ ¾
....	....	80	63½	100	Transcontinental pfd.	1,325	74½	74¾	74	74	— 1
3	4⅛	7⅜	4½	5	Venezuelan Petro	900	4½	4⅝	4½	4½	0
30⅛	23⅞	27⅞	23½	N.P.	Warner-Quinlan	.....	.....	.....	.....	.....	.....
31⅛	22	32⅝	20⅜	N.P.	Wilcox Oil & Gas	2,860	25½	25½	23¾	23¾	— ½
9½	4¾	8	5¼	$1	Woodley Petroleum	500	5½	5¾	5½	5¾	0

*New High †New Low ‡Ex-Dividend

Los Angeles Shipments Heavier

LOS ANGELES, June 4.—Shipments of petroleum products out of Los Angeles Harbor during the week ending May 28 to points outside of Pacific Coast trade territory reached 1,701,237 barrels, a daily average of 243,034 barrels. It was the best week since the week ending April 2, which was the best of year.

Pacific foreign points drew 92,507 barrels of crude, 73,746 barrels of fuel and 31,661 barrels of Deisel. Atlantic domestic took 214,817 barrels of crude, 213,195 barrels of fuel, 250,943 barrels of gasoline and 79,198 barrels of gas oil. The rest went to Atlantic foreign ports, consisting largely of fuel.

Associated Oil Co. moved three cargoes of crude to New York for Tidewater, and Baltimore was the destination for two cargoes of gasoline loaded out by Standard and Pan American. General Petroleum loaded out the gas oil cargo for New York.

* * *

Los Angeles, June 4.—Shipments of petroleum products out of Los Angeles harbor during May slightly exceeded 200,000 barrels daily average, which was exceeded in February by about 5,000 barrels, daily average.

The total movement out of Los Angeles harbor in May to points outside of Pacific coast trade territory was 6,608,911 barrels, divided as follows: crude, 927,664 barrels; fuel, 3,501,581 barrels; gasoline 1,831,328 barrels; kerosene, 59,243 barrels; Diesel, 138,377 barrels, and tops, 150,718 barrels.

Most of the crude went to Atlantic domestic and the movement of fuel was about equally divided between Pacific foreign, Atlantic domestic and Atlantic foreign, each area drawing slightly more than 1,000,000 barrels each. The gasoline movement was divided largely between Atlantic domestic and Atlantic foreign.

WICHITA FALLS, Tex.—The gathering lines of the Sinclair Crude Oil Purchasing Co. in the Markley district, Young Co., Tex., were purchased March 16 by the Wichita Pipe Line Co. here.

NEW YORK CURB BONDS

Week Ending June 3

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	99	99	99	— 1/2
Cities Serv. 5s '56	91 3/4	91 3/4	91 3/4	0
Cities Serv. 6s '66	101 1/8	101	101	0
Empire Oil 5 1/2s	96	96	96	0
Galena S. O. 7s '30	91	90 3/4	90 3/4	0
General Pet. 6s '28	100 7/8	100 1/2	100 7/8	+ 3/8
Gulf Oil 5s '37	100	99 1/8	99 1/2	— 1/4
Gulf Oil 5s '47	99 5/8	99 1/4	99 1/4	— 1/4
Indepen. Oil 6s '39	99	99	99	0
Phillips Pet. 5 1/2s	99 1/2	99 1/2	99 1/2	0
Pure Oil 6 1/2s '33	103 7/8	103 7/8	103 7/8	+ 1/8
Shell Union Oil 5s	99 1/2	99 3/8	99 1/2	0
Skelly Oil 5 1/2s. '39	97	95	95	—2
S. O. N. Y. 6 1/2s '33	104 7/8	104 3/8	104 5/8	+ 1/8
Sun Oil 5 1/2s '39	100 1/2	100 1/4	100 1/2	+ 1/2
Trans. Cont. Oil 7s '30	99	98 5/8	99	0
United Oil Prod. 8s '31	76	76	76	—3 7/8

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